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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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INVESTIGATION OF SPACE SHUTTLE LAUNCH VEHICLE EXTERNAL TANK NOSE CONFIGURATION EFFECTS (MODEL 67-OTS) IN THE ROCKWELL INTERNATIONAL 7- BY 7-FOOT TRISONIC WIND TUNNEL (IA69)

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Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: Rockwell Trisonic 280
NASA Series Number: IA69
Model Number: 67-OTS
Test Dates: 11 through 14 January 1974
Occupancy Hours: 25

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INVESTIGATION OF SPACE SHUTTLE LAUNCH VEHICLE EXTERNAL TANK NOSE CONFIGURATION EFFECTS (MODEL 67-OTS) IN THE ROCKWELL INTERNATIONAL 7- BY 7-FOOT TRISONIC WIND TUNNEL (IA69)

By Robert Mennell & Robert Rogge*

ABSTRACT

Experimental aerodynamic investigations were conducted on an 0.015-scale representation of the Space Shuttle Launch Configuration in the Rockwell International Trisonic Wind Tunnel during the time period of January 11 to 14, 1974. The NASA designation for this test period was IA69.

The primary test objectives were to investigate shock wave formation and record the aerodynamic stability and control effects generated by a new external tank nose configuration (MCR 467) at a Mach number of 1.2. Schlieren photographs were taken at angles of attack of -4°, 0°, and 4°, β = 0° with force and pressure data recorded over the alpha range of $-4° \leq \alpha \leq 4°$ at $\beta = \pm 4°$.

The launch configuration model, consisting of the VL70-000140A/B Orbiter, the VL78-000041B ET, and the VL77-000036A SRBs, was sting mounted on a 2.5-inch Task type internal balance entering through the ET base region. Wing, body, and base pressure lines for all orifices were routed internally through the model to the sting support system. Parametric variation consisted only of altering the ET nose configuration.

* Rockwell International Space Division

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(F): CP VS. 2Y/B

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NOMENCLATURE

Symbol	SADSAC Symbol	Definition
$A_{b_{ACPS}}$		attitude control propulsion system base area, ft^2 (total for right + left)
$A_{b_{ET}}$		external tank total base area, ft^2
$A_{b_{OMS}}$		orbital maneuvering system base area, ft^2
$A_{b_{ORB}}$		Orbiter total base area, ft^2
$A_{b_{SRB}}$		SRB shroud base area (minus projected nozzle base area, total for right + left), ft^2
$A_{b_{SRBN}}$		SRB nozzle base area, ft^2 (total for right + left)
$A_{c_{ET}}$		external tank cavity area, ft^2
$A_{c_{ORB}}$		Orbiter cavity area, ft^2
$C_{A_{BAL}}$		balance chord force coefficient, uncorrected
$C_{A_{b_{ACPS}}}$		chord force coefficient-correction due to ACPS base pressures. (Corrected to P_o using $A_{b_{ACPS}}$)
$C_{A_{b_{ET}}}$		chord force coefficient correction due to ET base pressure. (Corrected to P_o using $A_{b_{ET}}$)
$C_{A_{b_{OMS}}}$		chord force coefficient correction due to OMS base pressure. (Corrected to P_o using $A_{b_{OMS}}$)
$C_{A_{b_{ORB}}}$		chord force coefficient correction due to Orbiter base pressure. (Corrected to P_o using $A_{b_{ORB}}$)

NOMENCLATURE (Continued)

$C_{A_{b_{SRB}}}$		chord force coefficient correction due to SRB shroud base pressure. (Corrected to P_o using $A_{b_{SRB}}$)
$C_{A_{b_{SRBN}}}$		chord force coefficient correction due to SRB nozzle base pressure. (Corrected to P_o using $A_{b_{SRBN}}$)
$C_{A_{C_{ET}}}$		chord force coefficient correction due to ET cavity pressure. (Corrected to P_B using $A_{C_{ET}}$)
$C_{A_{C_{ORB}}}$	CACORD	chord force coefficient correction due to Orbiter cavity pressure. (Corrected to P_B using $A_{C_{ORB}}$)
C_{A_F}	CAF	launch vehicle forebody chord force coefficient. (Corrected to P_o)
C_{A_T}	CA	launch vehicle total chord force coefficient. (Corrected to P_B)
C_ℓ	CBL	launch vehicle rolling-moment coefficient
C_D	CD	launch vehicle total chord force coefficient. (Corrected to P_B)
C_{D_F}	CDF	launch vehicle forebody drag coefficient. (Corrected to P_o)
C_L	CL	launch vehicle total lift coefficient. (Corrected to P_B)
C_{L_F}		launch vehicle forebody lift coefficient. (Corrected to P_o)
C_m	CLM	launch vehicle total pitching-moment coefficient. (Corrected to P_B)

NOMENCLATURE (Continued)

C_{m_F}		launch vehicle forebody pitching-moment coefficient. (Corrected to P_0)
C_N	CN	launch vehicle normal-force coefficient
C_{P_i}	CP(I)	launch vehicle pressure coefficient at station i
C_Y	CY	launch vehicle sideforce coefficient
C_n	CYN	launch vehicle yawing-moment coefficient
i		incidence angle of Orbiter reference plane with respect to ET reference plane, deg.
ℓ_{REF}	L_{REF}	reference length, in
M_0	MACH	tunnel freestream Mach number
$MRP(X_T,Y_T,Z_T)$		moment reference point in ET coordinate system
P_B		orbiter base pressure
P_i		model absolute pressure, psfa
P_0	PO	tunnel freestream static pressure, psfa
P_T	PT	tunnel freestream total pressure, psfa
q	Q(PSF)	tunnel freestream dynamic pressure, psf
RN	RN/L	tunnel Reynolds number, millions per foot
S_{REF}	S_{REF}	reference area, ft^2
T_0	TO	tunnel freestream static temperature, °R
T_T	TT	tunnel freestream total temperature, °R

W_{F_i}		model pressure weighting factor, (either 0 or 1)
X_{CP}	XCP	launch vehicle center of pressure location
X_o		orbiter longitudinal station, in.
X_T		ET longitudinal station, in.
Y_o		orbiter spanwise station, in.
Y_T		ET spanwise station, in.
α	ALPHA	launch vehicle angle of attack, deg
β	BETA	launch vehicle angle of sideslip, deg
δ_a	AILRON	aileron deflection $(\delta_{e_L} - \delta_{e_R})/2$, deg
δ_{BF}	BDFLAP	body flap deflection, deg.
δ_e	ELEVON	elevon deflection $(\delta_{e_L} + \delta_{e_R})/2$, deg
δ_R	RUDDER	rudder deflection, deg
δ_{SB}	SPDBRK	speed brake deflection angle, deg
Λ_{LE}		wing leading edge sweep angle, deg
ϕ	PHI	radial location of orbiter nose static pressure tap location, deg
a		aileron
ACPS		attitude control propulsion system
BAL		internal balance
e		elevon
ET		external tank
i		model pressure orifice number

NOMENCLATURE (Concluded)

I		inboard
L		left
O		outboard
MPS		main propulsion system
OMS		orbiter maneuvering system
r		rudder
R		right
SRB		solid rocket booster
SRBN		solid rocket booster nozzle
b	BREF	reference span; m, ft, in
	X/L	longitudinal location on orbiter fuselage
η	2Y/B	spanwise location on orbiter wing surface
	X/C	chordwise location on orbiter wing surface
L/D_f	L/DF	lift to forebody drag ratio

CONFIGURATIONS INVESTIGATED

The model used for this test period was an 0.015-scale representation of the Rockwell International Space Shuttle Launch Vehicle consisting of Orbiter, external oxygen-hydrogen tank (ET), and solid rocket boosters (SRB). The VL70-000140A/B Orbiter model was of the blended wing body design utilizing a double delta wing ($75°/45° \Lambda_{LE}$), full span elevons (unswept hingeline), a centerline vertical tail with rudder and/or speedbrake deflection capability, and an orbital maneuvering system (OMS) mounted on the aft fuselage. The ET, per VL78-000041B, and the SRB's, per VL77-000036A, were designed to incorporate all full scale attach structures, protuberances, fairings, fuel feed and vent lines, etc. The alternate ET nose tested was per model dwg. SS-A01167.

The Orbiter model was constructed primarily of cast aluminum while both the ET and SRB's were of machined aluminum. The ET was designed to accept a sting-mounted 2.5-inch diameter Task type balance for use in force measurement. Orifices were located in the Orbiter, ET, and SRB base regions for use in recording base pressure levels per figures 2h and 2i. Additional pressure orifices were located in the Orbiter per figures 2j and 2k.

The following letter designations were used to describe the various launch vehicle configurations:

Symbol	Definition
AT_9	Attach structure-rear SRB/ET per Rockwell lines VL72-000106, model dwg. SS-A01168
AT_{12}	Attach structure-left rear ORB/ET per Rockwell lines VL78-000050, model dwg. SS-A01167

AT_{13}	Attach structure-right rear ORB/ET per Rockwell lines VL78-000050, model dwg. SS-A01167
AT_{14}	Attach structure-front SRB/ET per Rockwell lines VL77-000051A, model dwg SSA-01168
AT_{15}	Attach structure-front ORB/ET, location per Rockwell lines VL72-000088D, model dwg. SS-A01167
B_{26}	Orbiter fuselage per Rockwell lines VL70-000140A/B, model dwg. SS-A00147
C_9	Orbiter canopy per Rockwell lines VL70-000140A/B, VL70-000143A, model dwg. SS-A00147
E_{26}	Orbiter full span, unswept hingeline elevons per Rockwell lines VL70-000200, model dwg. SS-A00148
F_7	Orbiter body flap per Rockwell lines VL70-000145, model dwg. SS-A00147
FL_1	ET/ORB. LOX feed line per Rockwell lines VL78-000050, model dwg. SS-A01167
FL_2	ET/ORB. LH_2 feed line per Rockwell lines VL78-000050, model dwg. SS-A01167
M_7	Orbiter OMS/RCS pods per Rockwell lines VL70-000145, model dwg. SS-A00147
N_{28}	Orbiter OMS engine nozzles per Rockwell lines VL70-000140A, model dwg. SS-A00147
N_{41}	SRB engine nozzles per Rockwell lines VL77-000036A
PS_1	SRB electrical tunnel fairing per model dwg. SS-A01168
PS_2	SRB attach ring per Rockwell lines VL77-000036A, model dwg. SS-A01168
PS_3	SRB separation rocket fairing per Rockwell lines VL77-000036A, model dwg. SS-A01168
PT_1	ET_{12} LOX vent line fairing per Rockwell lines VL78-000031A, model dwg. SS-A01167
PT_2	ET LOX feed line per Rockwell lines VL78-000031A, model dwg. SS-A01167

PT_3 — ET LH_2 feed line per Rockwell lines VL78-000031A, model dwg. SS-A01167

PT_8 — ET_{19} LOX vent line per model dwg. SS-A01167

R_5 — Orbiter rudder per Rockwell lines VL70-000146A, model dwg. SS-A00148

S_{12} — SRB per Rockwell lines VL77-000036A, model dwg. SS-A01167

T_{12} — ET per Rockwell lines VL78-000041A, model dwg. SS-A01167 nose @ sta. 309.00

T_{19} — ET per model dwg. SS-A01167. Nose @ sta. 324.27

V_8 — Orbiter centerline vertical tail per Rockwell lines VL70-000146A, model dwg. SS-A00148

W_{116} — Orbiter double delta wing per Rockwell lines VL70-000200, model dwg. SS-A00148

In order to facilitate the writing of various launch configuration nomenclature, the following abbreviations were used:

Symbol	Definition
O_1	Orbiter B_{26} C_9 M_7 N_{28} F_7 W_{116} E_{26} V_8 R_5
T_1	External Tank T_{12}
T_4	External Tank T_{19}
S_1	Solid Rocket Booster S_{12} N_{41}
P_2	Fairings PS_1, PS_2, and PS_3
P_6	Components PT_1, PT_2, PT_3, AT_9, AT_{12}, AT_{13}, AT_{14}, AT_{15}, FL_1, FL_2
P_7	Components PT_2, PT_3, PT_8, AT_9, AT_{12}, AT_{13}, AT_{14}, AT_{15}, FL_1, FL_2

TEST FACILITY DESCRIPTION

The Rockwell International Trisonic Wind Tunnel is an intermittent blow down facility with a 7- by 7-foot tandem test section capable of testing force, inlet, pressure, and flutter models at Mach numbers from 0.1 to 3.5.

Two synchronous motor driven centrifugal compressors, operating in series, supply dry air at a rate of 40 lb/sec. to eight storage spheres having a total volume of 214,000 ft^3. The air is dried to a moisture content of 0.0001 lb. or less of water per lb. of dry air (approx. -35°F dew point) and stored at a pressure of ten atmospheres. Flow from the air storage spheres is regulated by a servo controlled value. The eight-foot diameter valve opens within two seconds to control and stabilize the settling chamber at a preselected pressure.

Downstream of the settling chamber is a fixed nozzle which provides a transition from the circular cross-section of the settling chamber to the rectangular cross-section of the variable nozzle. Two seven-foot wide steel plates, supported between parallel walls by hydraulic jacks, form the floor and ceiling of the flexible nozzle section. Changes in nozzle contour to produce variations in Mach number are accomplished by means of these jacks and require 30 to 50 minutes to complete.

The two test sections for supersonic, transonic, and subsonic testing are 7- by 7-feet and are permanently installed in a tandem arrangment. The standard supersonic test section (for testing at Mach numbers greater than 1.3) is in the downstream end of the flexible nozzle. The test section

for subsonic and transonic operation is located in the downstream end of the porous wall area. An access door to the test section is located in the variable diffuser.

The variable diffuser downstream of the porous wall area may be adjusted to provide subsonic Mach number control, to generate transonic Mach numbers, and to minimize start time for supersonic testing with models having high tunnel blockage.

An equivalent 5° conical expansion angle is provided in a fixed diffuser which completes the basic tunnel circuit. Downstream of the diffuser is a sound abatement muffler building where the air is exhausted to the atmosphere.

DATA REDUCTION

The aerodynamic force and moment data presented were measured by the Task Corporation 2.5-inch diameter MK XB internal strain gage balance. The data have been corrected for orbiter, external tank, and solid rocket booster base pressure drag, sting and balance deflections, and model weight tare.

The corrections to the axial force were accomplished in the following manner.

$$C_{A_T} = C_{A_{BAL}} + C_{A_{C_{ORB}}} + C_{A_{C_{ET}}}$$

where

$$C_{A_{C_{ORB}}} = -C^*_{A_{C_{ORB}}} + C^*_{A_{b_{ORB}}}$$

$$C_{A_{C_{ET}}} = -C^*_{A_{C_{ET}}} + C^*_{A_{b_{ET}}}$$

and

$$C^*_{A_{C_{ORB}}} = -C_{P_8}\left(\frac{A_{C_{ORB}}}{S_{REF}}\right) WF_8$$

$$C^*_{A_{b_{ORB}}} = -C_{P_1}\left(\frac{A_{b_{ORB}}}{S_{REF}}\right) WF_1$$

$$C^*_{A_{C_{ET}}} = -C_{P_9}\left(\frac{A_{C_{ET}}}{S_{REF}}\right) WF_9$$

$$C^*_{A_{b_{ET}}} = -C_{P_5}\left(\frac{A_{C_{ET}}}{S_{REF}}\right) WF_5$$

where

$$C_{P_i} = \frac{P_i - P_o}{q},$$ where i is manifold pressure.

$$C_{A_F} = C_{A_{Total}} - C_{A_{b_{ORB}}} - C_{A_{b_{OMS}}} - C_{A_{b_{ACPS}}} - C_{A_{b_{SRB}}} - C_{A_{b_{SRBN}}} - C_{A_{b_{ET}}}$$

where

$$C_{A_{b_{ORB}}} = - C_{P_1} \left(\frac{A_{b_{ORB}}}{S_{REF}}\right) WF_1$$

$$C_{A_{b_{OMS}}} = - C_{P_3} \left(\frac{A_{b_{OMS}}}{S_{REF}}\right) WF_3$$

$$C_{A_{b_{ACPS}}} = - C_{P_3} \left(\frac{A_{b_{ACPS}}}{S_{REF}}\right) WF_3$$

$$C_{A_{b_{SRB}}} = - C_{P_6} \left(\frac{A_{b_{SRB}}}{S_{REF}}\right) WF_6$$

$$C_{A_{b_{SRBN}}} = - C_{P_7} \left(\frac{A_{b_{SRBN}}}{SREF}\right) WF_7$$

$$C_{A_{b_{ET}}} = - C_{P_5} \left(\frac{A_{b_{ET}}}{S_{REF}}\right) WF_5$$

The following reference dimensions were used for reducing all aerodynamic data to coefficient form:

Symbol	Definition	Value: Full Scale	Value: Model Value
$A_{b_{ACPS}}$	ACPS base area, ft^2	37.778	0.0085
$A_{b_{ET}}$	ET base area, ft^2	572.555	0.1288
$A_{b_{OMS}}$	OMS base area, ft^2	52.000	0.0117

$A_{b_{ORB}}$	Orbiter base area, ft^2		337.778	0.0760
$A_{b_{SRB}}$	SRB base area, ft^2		184.332	0.0415
$A_{b_{SRBN}}$	SRB nozzle base area, ft^2		217.792	0.0490
$A_{C_{ET}}$	ET balance cavity area, ft^2			0.0451
$A_{C_{ORB}}$	Orbiter balance cavity area, ft^2			0.0340
$L_{REF} = B_{REF}$	Orbiter body length, in.		1290.300	19.3550
MRP	Launch configuration C.G., in.	X_T	979.000	14.6850
		Y_T	0.0	0.0
		Z_T	400.000	6.0000
S_{REF}	Orbiter wing area, ft^2		2690.000	0.6053
W_{F_i}	Pressure weighting factor		0 or 1	

The following table describes the manifold system used to record and tabulate the 19 base pressure taps shown in figure 2(i).

PRESSURE COEFFICIENT MANIFOLD NUMBER	BASE PRESSURE TAP NUMBERS	LOCATION
1	1,2,3,4	Orbiter base
2	-	Spare
3	5 6	OMS base ACPS base
4	-	Spare
5	7,8,9,10,11	ET base
6	13,14	SRB base
7	15	SRBN base
8	16,17	Orbiter cavity
9	18,19	ET cavity

TABLE I.

TEST : IA69 TWT 280			DATE : 1/21/74
TEST CONDITIONS			
MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
1.08	7.4×10^6/ft.	8.6	45° to 70°
1.22	7.2×10^6/ft.	9.2	45° to 70°

BALANCE UTILIZED: Task 2.5-inch Mk X B

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF*	5500 lbs	±0.25%	
SF*	2750 lbs	±0.25%	
AF	1250 lbs	±0.25%	
PM			
RM			
YM	4000 in-lbs	±0.25%	

COMMENTS: * Each gage

TABLE II.

TEST : IA69 TWT 280

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE : 1/21/74

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δe	δR	δSB	δBF	TYPE	NO. OF RUNS	MACH NUMBERS 1.1	1.2
RF3X01	$O_1T_1S_1P_2P_6$	A	0	0	0	0	0	P	2	4	6
02			-4						1		5
03			+4								7
04	$O_1T_4S_1P_2P_7$		+4								8
05			0								9
06			-4								10
07			-4					F			11
08			0								12
09			0								17
10			+4								13
11	$O_1T_1S_1P_2P_6$		+4								14
12			0								16
13			-4								15

TEST RUN NUMBERS

NOTE: The "X" in the data set identifier will be an "A" for force data; a "U" for wing upper surface pressure data; an "L" for wing lower surface pressure data, an "F" for orbiter fuselage pressure data, or a "B" for base pressure data.

CP → Pressure

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN CA.F. CLM CY CYN CBL CA CACØ,RB → FORCE

α OR β SCHEDULES $\alpha(A) = -4, 0, 4$

COEFFICIENTS

P = PRESSURE DATA

F = FORCE DATA

IDVAR (1) IDVAR (2) NDV

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT: Attach Structure AT_9

GENERAL DESCRIPTION: Aft SRB/ET attach structure (3 member structure)

Model Scale: 0.015

DRAWING NO: VL72-000106

DIMENSIONS:

MEMBER		FULL SCALE	MODEL SCALE
#1	X_B	1515	22.725
	Y_B	± 56	± .840
	Z_B	50	.750
	X_T	2058	30.870
	Y_T	± 158	2.370
	Z_T	450	6.75
#2	X_B	1515	22.725
	Y_B	± 76	± 1.140
	Z_B	18	.270
	X_T	2058	30.870
	Y_T	160	2.400
	Z_T	445	6.675
#3	X_B	1515	22.725
	Y_B	± 56	± .840
	Z_B	- 50	- .750
	X_T	2058	30.870
	Y_T	± 158	± 2.370
	Z_T	350	5.250

Diameter of Members: TBD

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure AT_{12}

GENERAL DESCRIPTION: Left rear orbiter/ET attach structure (2 member structure)

Model Scale: 0.015

DRAWING NO. VL78-000050

DIMENSION:

MEMBER		FULL SCALE	MODEL SCALE
#1	X_O	1303	19.545
	Y_O	-96	-1.440
	Z_O	258	3.870
	X_T	1859	27.885
	Y_T	115	1.725
	Z_T	510	7.650
#2	X_O	1317	19.755
	Y_O	-96	-1.440
	Z_O	258	3.870
	X_T	2058	30.870
	Y_T	115	1.725
	Z_T	510	7.650

Diameter of Members: TBD

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure AT_{13}

GENERAL DESCRIPTION: Right rear orbiter/ET attach structure (3 member structure)

Model Scale: 0.015

MODEL NO. VL78-000050

DIMENSION:	MEMBER		FULL SCALE	MODEL SCALE
	#1	X_o	1313	19.695
		Y_o	+96	1.44
		Z_o	258	3.870
		X_T	1859	27.885
		Y_T	-115	-1.725
		Z_T	-510	7.650
	#2	X_o	1317	19.755
		Y_o	+96	1.440
		Z_o	258	3.870
		X_T	2058	30.870
		Y_T	-115	-1.725
		Z_T	510	7.650
	#3	X_o	1317	19.755
		Y_o	96	1.440
		Z_o	258	3.870
		X_T	2058	30.870
		Y_T	0	0
		Z_T	566	8.490

Diameter of Members: TBD

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure AT_{14}

GENERAL DESCRIPTION: Forward SRB/ET attach structure

Model Scale: 0.015

DRAWING NO: VL77-000051A

DIMENSION:

	FULL SCALE	MODEL SCALE
X_B	404	6.060
Y_B	± 177	2.655
Z_B	0	0
X_T	947	14.205
Y_T	± 167	2.505
Z_T	400	6.000

Model Component: Attach Structure AT_{15}

General Description: Forward attach structure between orbiter and external tank. Modified to accept Rockwell International Trisonic Wind Tunnel Starting Loads.

model scale: .015

	Full Scale	Model Scale
X_O	391.00	5.865
Y_O	0.0	0.0
X_T	998.87	16.980
Y_T	0.0	0.0
Diameter, in.	33.33	0.500

TABLE III. - Continued.

MODEL COMPONENT: BODY - (B_{26})

GENERAL DESCRIPTION: Orbiter Fuselage Configuration 140 A/B

NOTE: B_{26} identical to B_{24} except underside of fuselage refaired to accept W_{116}.

Model Scale = 0.015

DRAWING NUMBER: VL70-000193
VL70-000140A

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
Length (Body Fwd Sta X_o = 235) - in.	1290.3	19.355
Max. Width (at X_o = 1520) - in.	262.0	3.93
Max. Depth (at X_o = 1464) - in.	250.0	3.75
Fineness Ratio	0.26357	0.26357
Area - ft^2		
Max. Cross-Sectional	340.88462	0.07670
Planform		
Wetted		
Base		

MODEL COMPONENT : Canopy (C_9)

GENERAL DESCRIPTION : Configuration 140 A/B Orbiter Fuselage

Model Scale = 0.015 Model Drawing No. SS-A00147

DRAWING NUMBER : VL70-000140A
VL70-000143A

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (X_o=434.643 to 670), in.	235.357	3.530
Max Width (@ X_o=513.127), in	152.412	2.286
Max Depth (@ X_o=485.0), in	25.000	0.375
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. - Continued.

MODEL COMPONENT: ELEVON - (E_{26})

GENERAL DESCRIPTION: Configuration 140 A/B Orbiter Elevon

NOTE: VL70-000200 data for (1) of (2) sides. Identical to E_{25} except airfoil thickness

Model Scale = 0.015 Model Drawings No. SS-A00148

DRAWING NUMBER: VL70-000200
VL70-000140 B

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	223.5814	0.0503
Span (equivalent), in.	368.34	5.525
Inb'd equivalent chord, in.	119.623	1.794
Outb'd equivalent chord, in.	55.1922	0.828
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	-10.056	-10.056
Hingeline	0.00	0.00
Area Moment (Normal to hinge line), ft^3	851.1502	0.00287

TABLE III. - Continued.

MODEL COMPONENT: Body Flap - (F_7)

GENERAL DESCRIPTION: Configuration 140 A/B Orbiter Body Flap

NOTE: Body flap has variable centerline deflection of +13.75° and -14.25° from null position. Hinge line located at X_o =1528.3, Z_o = 284.3

Model Drawing No. SS-A00147

Model Scale = 0.015

DRAWING NUMBER VL70-000140A, VL70-000145

DIMENSION:	FULL SCALE	MODEL SCALE
Length (X_o=1520 to X_o=1613) - IN.	93.000	1.395
Max Width - IN.	262.000	3.930
Max Depth (X_o = 1520) - IN.	23.000	0.345
Fineness Ratio		
Area - Ft^2		
Max Cross-Sectional		
Planform	150.5250	0.0339
Wetted		
Base	41.84722	0.00941

TABLE III. - Continued.

MODEL COMPONENT Feed line FL_1

DESCRIPTION: LOX feed line between ET and orbiter

MODEL SCALE: 0.015

DRAWING NO: VL78-000050

DIMENSIONS:	FULL SCALE	MODEL SCALE
℄ at: X_T	2063.5	30.953
Y_T	-70	-1.053
X_o	1330.5	19.958
	-70	-1.053
Diameter, in.	18.5	.278

TABLE III. - Continued.

MODEL COMPONENT: Feed line FL_2

DESCRIPTION: LH_2 feed line between ET and orbiter

MODEL SCALE: 0.015

DRAWING NO.: VL78-000050

DIMENSIONS:

	FULL SCALE	MODEL SCALE
℄ at X_T	2063.5	30.953
Y_T	70	1.053
X_o	1330.5	19.958
Y_o	70	1.053
Diameter, in.	18.5	.278

TABLE III. - Continued.

MODEL DIMENSIONAL DATA

MODEL COMPONENT : OMS Pod (M_7)

GENERAL DESCRIPTION : Configuration 140 A/B Orbiter OMS-Pod

Model Scale = 0.015 Model Drawing No. SS-A00147

DRAWING NUMBER : VL70-000140A
VL70-000145

DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta X_o=1233.0) -IN.	327.000	4.905
Max Width (@ X_o=1450.0) - IN.	94.5	1.418
Max Depth (@ X_o=1493.0) - IN.	109.000	1.635
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

MODEL COMPONENT: NOZZLES -(N 28)

GENERAL DESCRIPTION: Configuration 140 A/B Orbiter OMS Nozzle

MODEL SCALE = 0.015 Model Drawing No. SS-A00147

DRAWING NO. VL70-000140A

DIMENSIONS	FULL SCALE	MODEL SCALE
Mach No.		
Length ~ in.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter ~ in.		
Exit		
Throat		
Inlet		
Area ~ ft^2.		
Exit		
Throat		
Gimbal Point (station) ~ in.		
X	1518.00	22.77
Y	± 88.0	1.32
Z	492.0	7.38
Null Position ~ deg.		
Pitch	15° 49'	15° 49'
Yaw	12° 17'	12° 17'

MODEL COMPONENT: NOZZLES - N41

GENERAL DESCRIPTION: Configuration 4 BSRM Nozzles

MODEL SCALE = 0.015

DRAWING NO. VL72-000088E
VL77-000036A

DIMENSIONS	FULL SCALE	MODEL SCALE
Mach No.		
Length ~ in.		
Gimbal Point to Exit Plane	141.3	2.120
Throat to Exit Plane		
Diameter ~ in.		
Exit	141.3	2.120
Throat		
Inlet		
Area ~ ft^2.		
Exit	108.89 95	0.0245
Throat		
Gimbal Point (station) ~ in.		
X	1796.15	26.942
Y	±243.0	±3.645
Z	400.0	6.0
Null Position ~ deg.		
Pitch	0°	0°
Yaw	0°	0°
FS of Nozzle Exit Plane (X_T) IN.	2484	37.260

TABLE III. - Continued.

MODEL COMPONENT: SRB Protuberance PS_1

DESCRIPTION: Electrical tunnel fairing on top of each SRB

MODEL SCALE: 0.015

DRAWING NO: None

DIMENSION: (Data for 1 of 2)

	FULL SCALE	MODEL SCALE
Leading edge at X_B	467	7.001
℄ of tunnel Y_B	0	0
Trailing edge at X_B	1820	27.30
Height, in.	3	.045
Width, in.	6	.090
Λ_{LE}, deg.	72	72

TABLE III. - Continued.

MODEL COMPONENT: SRB Protuberance PS_2

DESCRIPTION: SRB/ET attach ring

MODEL SCALE: 0.015

DRAWING NO.: VL77-000036A

DIMENSIONS: (Data for 1 of 2)

	FULL SCALE	MODEL SCALE
℄ at X_B	1515	22.725
Width, in.	10	.15
Heighth, in.	10	.15

TABLE III. - Continued.

MODEL COMPONENT: SRB Protuberance PS_3

DESCRIPTION: Separation rocket fairing on each SRB nozzle shroud located 30° inboard from top centerline.

MODEL SCALE: 0.015

DRAWING NO.: VL77-000036A

DIMENSIONS: (Data for 1 of 2)

	FULL SCALE	MODEL SCALE
Leading edge at X_B	1796	26.940
Trailing edge at X_B	1889	28.335

Radial location is 30° inboard from top centerline.

TABLE III. - Continued.

MODEL COMPONENT: ET Protuberance PT_1

DESCRIPTION: LOX Vent Line Fairing on Tank T_{12} Nose

MODEL SCALE: .015

DRAWING NO. VL78-000031A

DIMENSIONS:		FULL SCALE	MODEL SCALE
Leading edge at	X_T	321	4.815
	Y_T	0	0
Trailing edge at	X_T	947	14.205
	Y_T	-70	1.053

TABLE III. - Continued.

MODEL COMPONENT: ET Protuberance PT_2

DESCRIPTION: LOX feed lines on vehicle 4 tank secured to tank by brackets with 50-inch spacing

MODEL SCALE: 0.015

DRAWING NO. VL78-000031A

		FULL SCALE	MODEL SCALE
DIMENSIONS:	Leading edge at X_T	947	14.205
	Y_T	-70	-1.053
	Trailing edge at X_T	1330	19.950
	Y_T	-70	-1.053
	Bracket spacing from X_T = 997, in.	50	.85

TABLE III. - Continued.

MODEL COMPONENT: ET Protuberance PT_3

DESCRIPTION: LH_2 feed line on vehicle 4 tank secured to tank by brackets with 50-inch spacing.

MODEL SCALE: 0.015

DRAWING NO. VL78-000031A

		FULL SCALE	MODEL SCALE
DIMENSIONS:	Leading edge at X_T	947	14.205
	Y_T	70	1.053
	Trailing edge at X_T	1330	19.950
	Y_T	70	1.053
	Bracket spacing from X_T = 997, in.	50	.85

TABLE III. - Continued.

Model Component: ET Protuberance PT_8

General Description: LOX Vent Line Fairing on Tank T_{19} Nose.

Model Scale: .015

		Full Scale	Model Scale
Leading Edge @	X_T	364.0	5.460
	Y_T	11.67	0.175
Trailing Edge @	X_T	947.00	14.205
	Y_T	- 70.00	1.053

TABLE III. - Continued.

MODEL COMPONENT: RUDDER - R5

GENERAL DESCRIPTION: **Configuration 140 A/B Orbiter Rudder**

Model Scale = 0.015 Model Drawing No. SS-A00148

DRAWING NUMBER: VL70-000095, VL70-000146A

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - FT^2	106.38	0.0239
Span (equivalent) - IN.	201.0	3.015
Inb'd equivalent chord, in.	91.585	1.374
Outb'd equivalent chord, in.	50.833	0.762
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Tailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Normal to hinge line)- FT^3 (Product of Area and Mean Chord)	526.13	0.00178

TABLE III. - Continued.

MODEL COMPONENT: BOOSTER SOLID ROCKET MOTOR - (S12)

GENERAL DESCRIPTION: Configuration 3A, Data for (1) of (2) sides, per Rockwell Lines VL77-000036A

Model Scale = 0.015

DRAWING NUMBER VL72-000088D
VL77-000036A

DIMENSION:	FULL SCALE	MODEL SCALE
Length (Includes Nozzle) - IN.	1741.0	26.115
Max Width (Tank Dia) - IN.	142.3	2.135
Max Depth (Aft Shroud) - IN.	192.0	2.880
Fineness Ratio	9.06771	9.06771
Area - FT^2		
Max Cross-Sectional	201.06193	0.0452
Planform		
Wetted		
Base		
WP of BSRM Centerline (Z_T) - IN.	400	6.000
FS of BSRM Nose (X_T) - IN.	743	11.145

TABLE III. - Continued.

MODEL COMPONENT: EXTERNAL TANK - (T12)

GENERAL DESCRIPTION: External Oxygen Hydrogen Tank

NOTE: Identical to T11 with external fuel lines added

Model Scale = 0.015

DRAWING NUMBER VL78-000031A
VL78-000041A

DIMENSION:	FULL SCALE	MODEL SCALE
Length - IN. (Nose @ X_T = 309)	1865	27.975
Max Width (Dia) - IN.	324	4.86
Max Depth, in.		
Fineness Ratio	5.75617	5.75617
Area - FT^2		
Max Cross-Sectional	572.555	0.1288
Planform		
Wetted		
Base		
WP of Tank Centerline (Z_T) - IN.	400.0	6.000

TABLE III. - Continued.

MODEL COMPONENT: EXTERNAL TANK T_{19}

GENERAL DESCRIPTION: External Oxygen - Hydrogen Fuel Tank. Same as T_{12} except for nose configuration.

Model Scale: .015

DRAWING NUMBER: MCR 467

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length - in. (Nose @ X_T = 324.27)	1849.73	27.746
Max. Width, in.	330.00	4.950
Max. Depth		
Fineness Ratio		
Area, ft^2		
Max. Cross-Sectional	593.98	0.1336
Planform		
Wetted		
Base		
W.P. of ET Centerline, in.	400.00	6.000

TABLE III. - Continued.

MODEL COMPONENT: VERTICAL - V8

GENERAL DESCRIPTION: Configuration 140 A/B Orbiter Vertical Tail

NOTE: Similar to V5 with radius on TE upper corner and LE lower corner where vertical meets fuselage.

Model Scale = 0.015   Model Drawing No. SS-A00148

DRAWING NUMBER: ~~VL70-000140A~~ VL70-000146A

DIMENSIONS:

TOTAL DATA

	FULL-SCALE	MODEL SCALE
Area (Theo) Ft^2	413.253	0.09298
Planform		
Span (Theo) In	315.720	4.73580
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.40399	0.40399
Sweep Back Angles, degrees		
Leading Edge	45.00	45.00
Trailing Edge	25.947	25.947
0.25 Element Line	41.130	41.130
Chords:		
Root (Theo) WP	268.500	4.02750
Tip (Theo) WP	108.470	1.62705
MAC	199.80756	2.99711
Fus. Sta. of .25 MAC	1463.50	21.95250
W. P. of .25 MAC	635.522	9.53283
B. L. of .25 MAC	0.00	0.00
Airfoil Section		
Leading Wedge Angle Deg	10.00	10.00
Trailing Wedge Angle Deg	14.920	14.920
Leading Edge Radius	2.00	0.0300
Void Area	13.17	0.00296
Blanketed Area	0.00	0.00

TABLE III. - Concluded.

MODEL COMPONENT: WING-(W_{116})

GENERAL DESCRIPTION: Configuration 140 A/B Orbiter Wing

NOTE: Identical to W_{114} except airfoil thickness. Dihedral angle is along trailing edge of wing.

Model Scale = 0.015

Model Drawing No. SS-A00148

DWG. NO. VL70-000140B, VL70-000 200

TEST NO.

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	0.6053
Span (Theo In.	936.6816	14.050
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees(at X_o=1506.623, Y_o=	3.500	3.500
Incidence Angle, degrees 105, Z_o= 282.75)	0.500	0.500
Aerodynamic Twist, degrees	+3.000	+3.000
Sweep Back Angles, degrees		
Leading Edge	45.00	45.00
Trailing Edge	-10.056	-10.056
0.25 Element Line	35.209	35.209
Chords: in.		
Root (Theo) B.P.O.O.	689.2429	10.339
Tip, (Theo) B.P.	137.8486	2.068
MAC	474.8117	7.222
Fus. Sta. of .25 MAC	1126.721	17.051
W.P. of .25 MAC	291.00	4.365
B.L. of .25 MAC	187.33491	2.810
EXPOSED DATA		
Area (Theo) Ft^2	1812.2205	0.408
Span, (Theo) In. BP108	736.6816	~~11.050~~
Aspect Ratio	2.058	2.058
Taper Ratio	0.2451	0.2451
Chords, in.		
Root BP108	570.6230	8.559
Tip 1.00 $\frac{b}{2}$	137.8512	~~2.06~~
MAC	354.2376	5.314
Fus. Sta. of .25 MAC	1164.237	17.464
W.P. of .25 MAC	292.00	4.380
B.L. of .25 MAC	239.67786	3.595
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ = 0.425	0.113	0.113
Tip $\frac{b}{2}$ = 1.00	0.12	0.12
Data for (1) of (2) Sides		
Leading Edge Cuff Planform Area Ft^2	79.13389	0.0266
Leading Edge Intersects Fus M. L. @ Sta	505.0	7.575
Leading Edge Intersects Wing @ Sta	1084.5	15.053

TABLE IV. - PRESSURE INSTRUMENTATION

ORBITER WING STATIC TAP LOCATIONS

% Chord	Y_o = 250 C = 388.67			Y_o = 365 C = 257.0		
	X	Upper Wing Tap No.	Lower Wing Tap No.	X	Upper Wing Tap No.	Lower Wing Tap No.
0	0(L.E.)	22		0(L.E.)	33	
0.05	19.47	23	28	12.87	34	39
0.15	58.33	24	29	39.13	35	40
0.40	155.47	25	30	102.80	36	41
0.725	281.80	26	31	186.33	37	42
0.95	369.27	27	32	244.13	38	43

ORBITER NOSE STATIC TAP LOCATIONS

ϕ \ X_o	235	265	325	380	450	500
0°	1	2	6		14	18
40°		3	7	11	15	19
90°		4	8	12	16	20
180°		5	9	13	17	21

Notes:

(1) Full Scale Dimensions
(2) Left Hand Only

Notes:

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

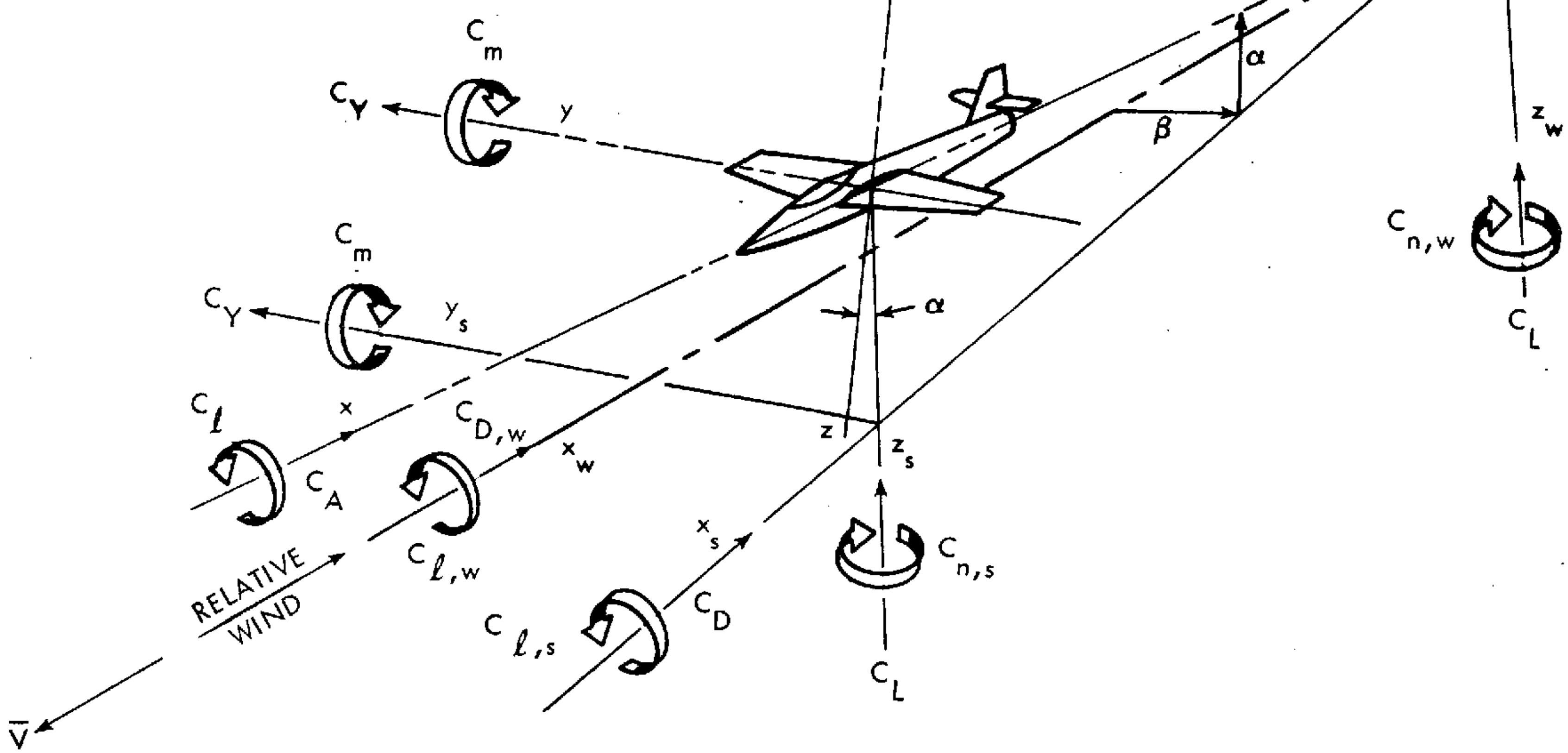
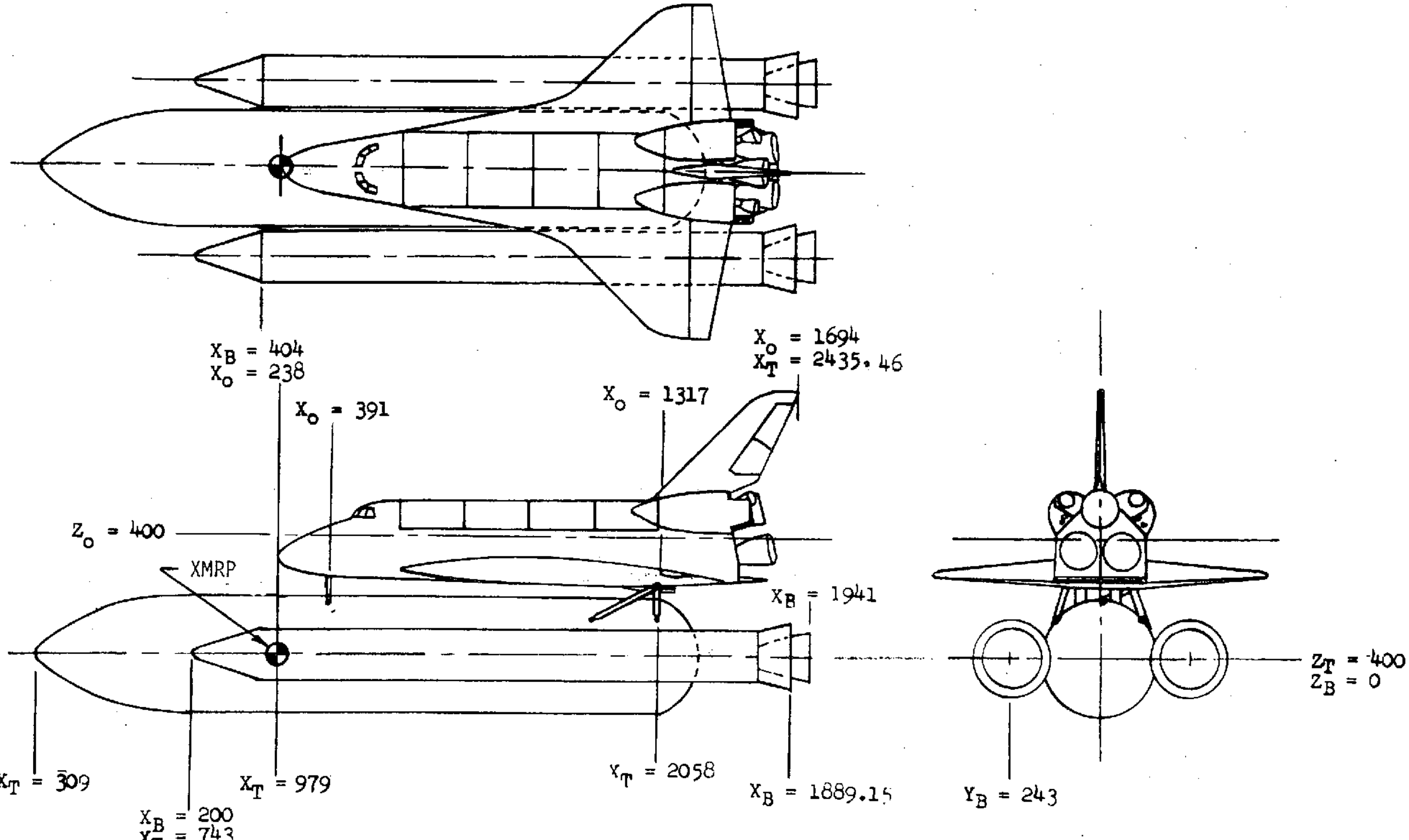
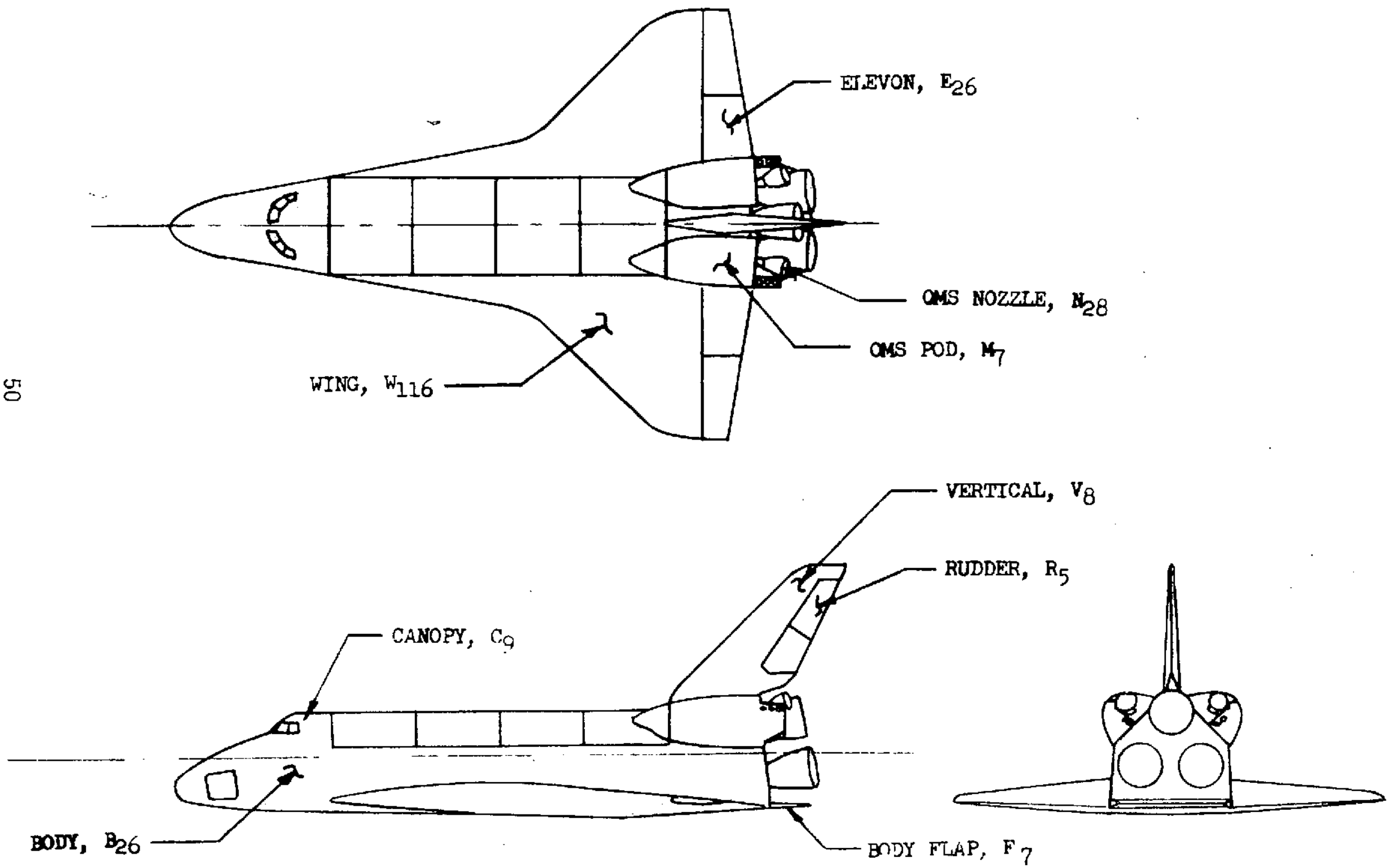


Figure 1. Axis Systems



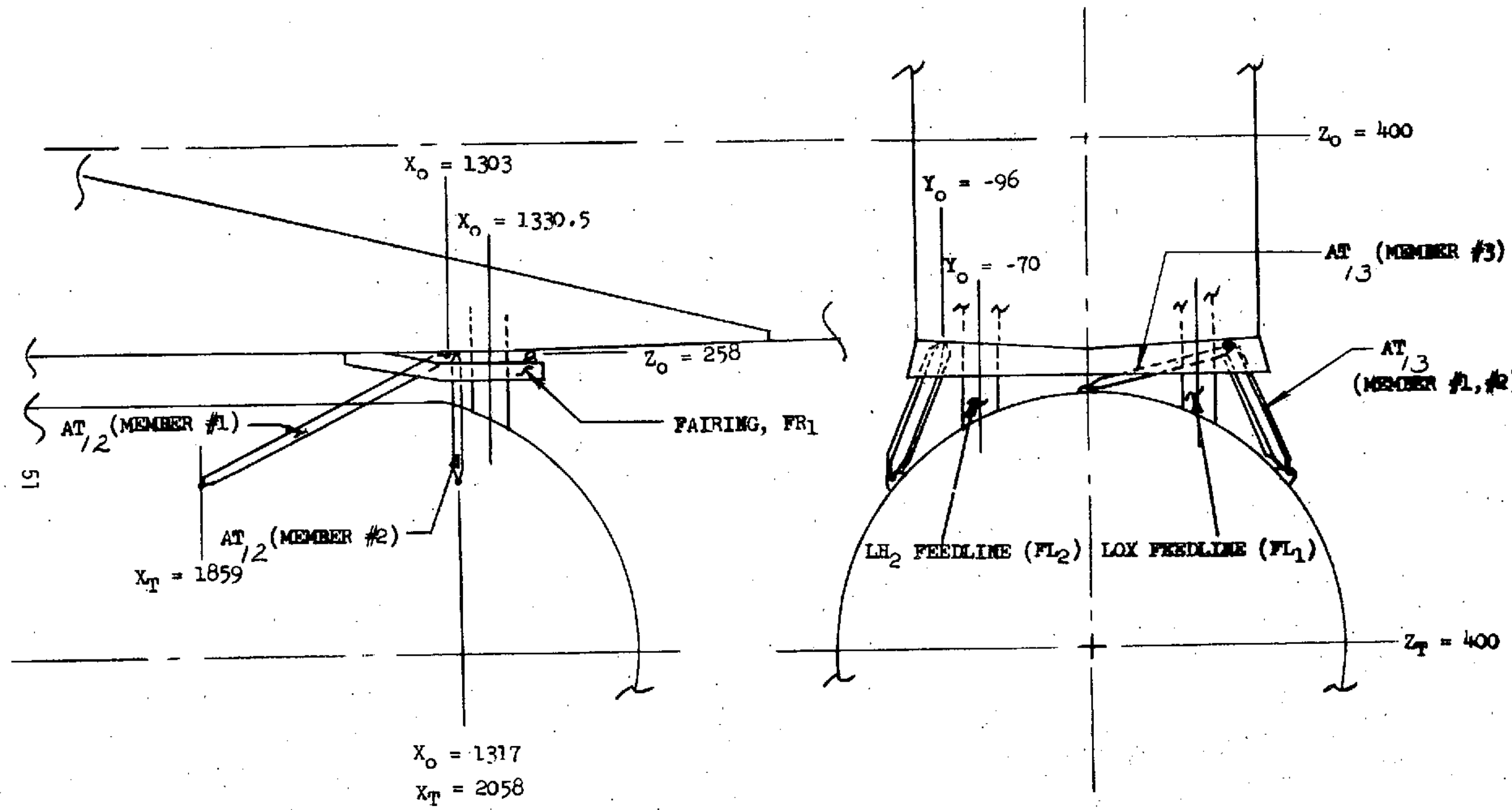
a. Mated Vehicle

Figure 2. - Model sketches.



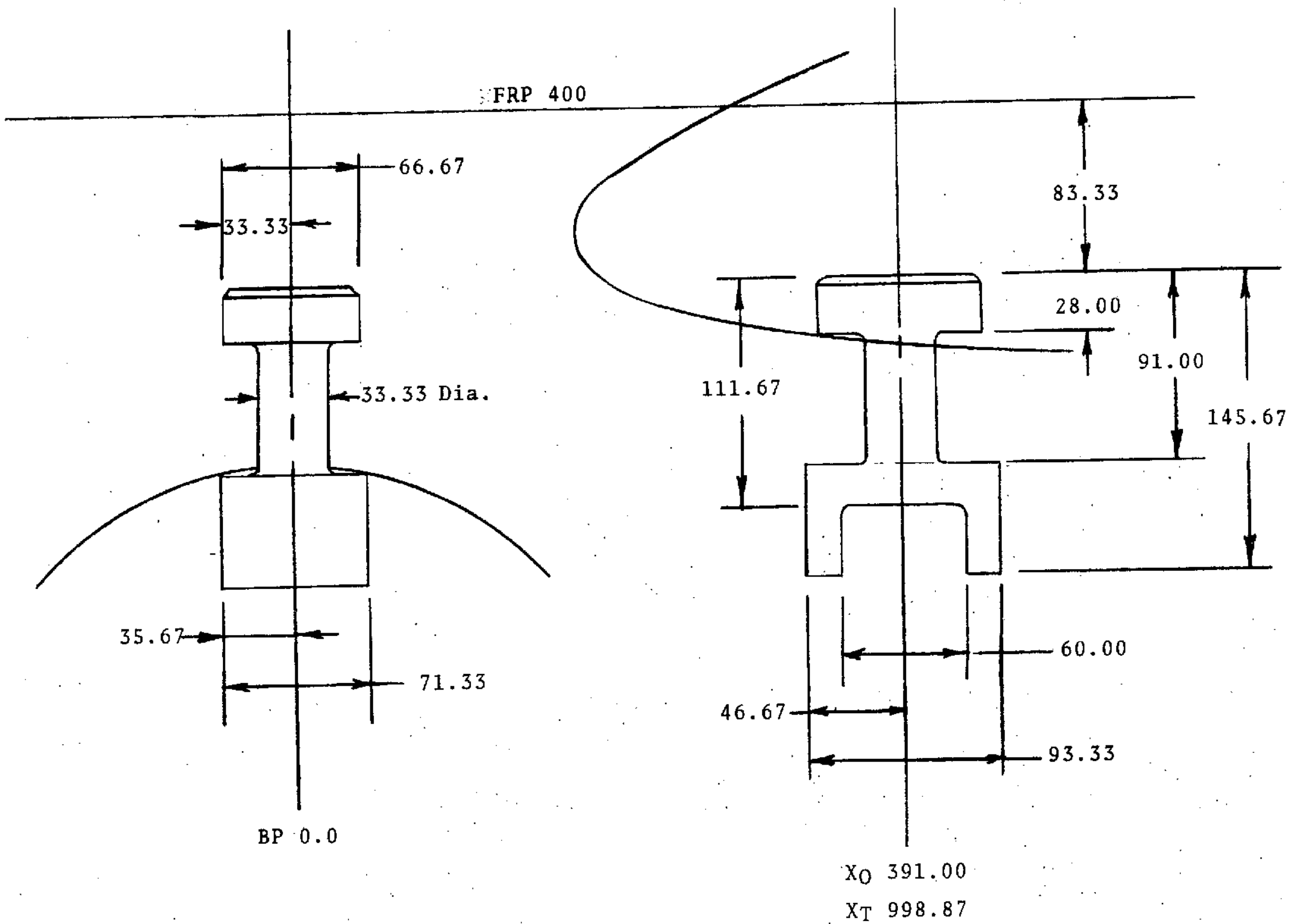
b. Orbiter Three View

Figure 2. - Continued.



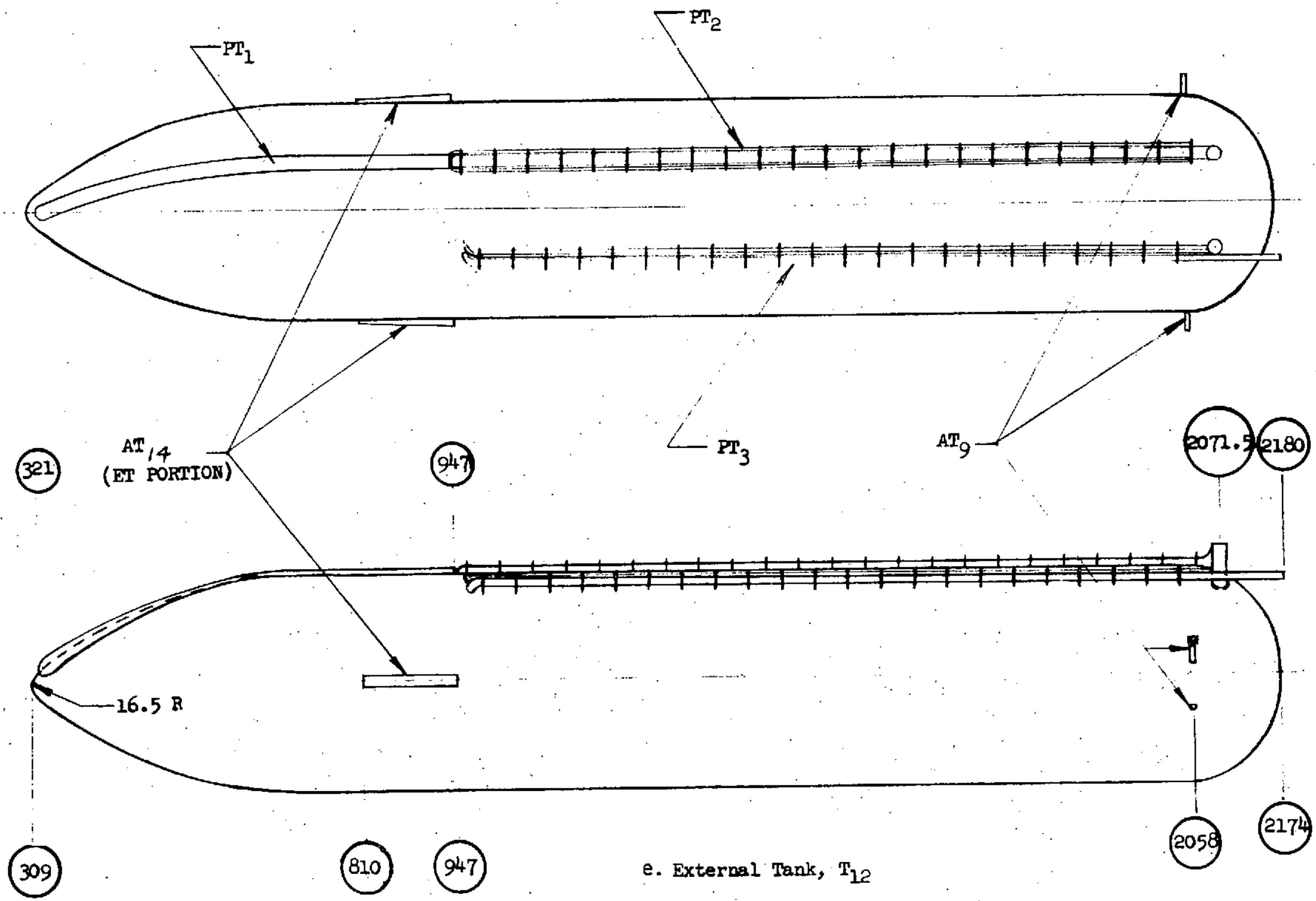
c. Aft Orbiter/ET Attach Hardware

Figure 2. - Continued.



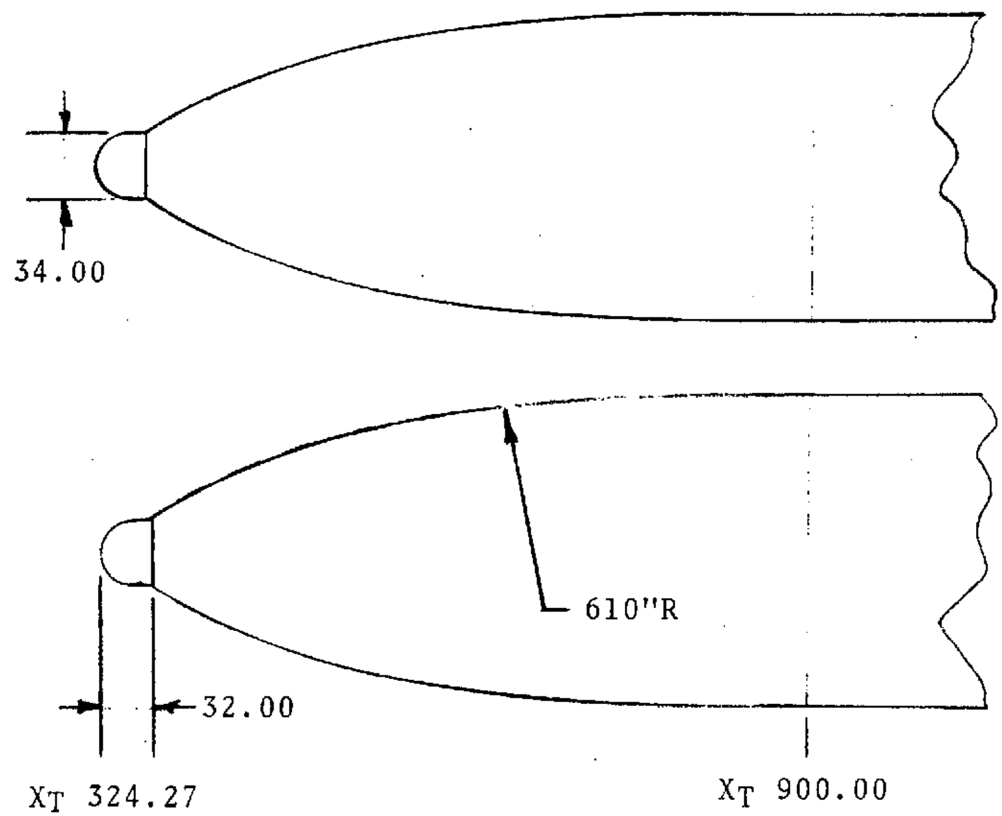
d. Front Orbiter/ET Attach Hardware

Figure 2. - Continued.



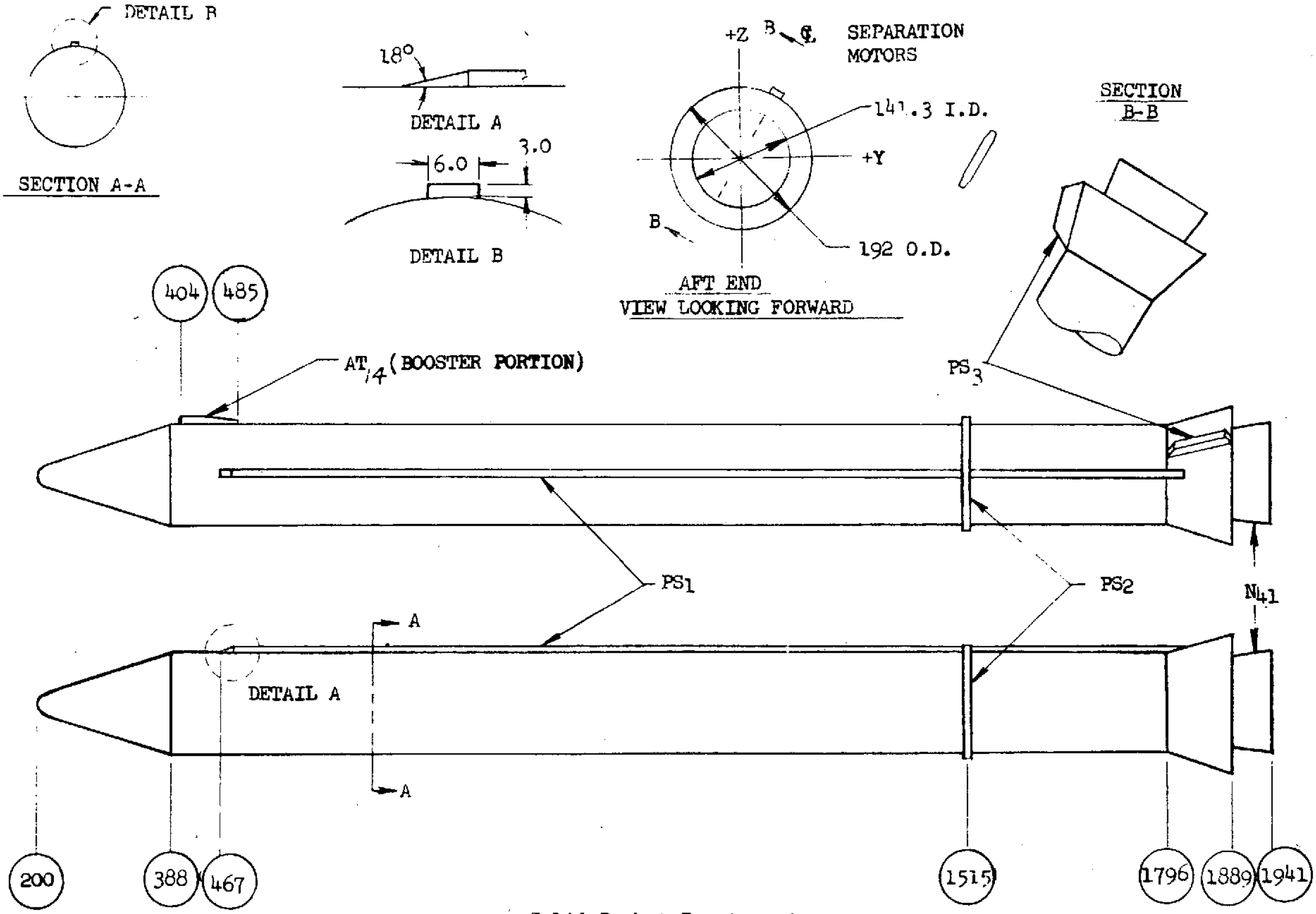
e. External Tank, T_{12}

Figure 2. - Continued.



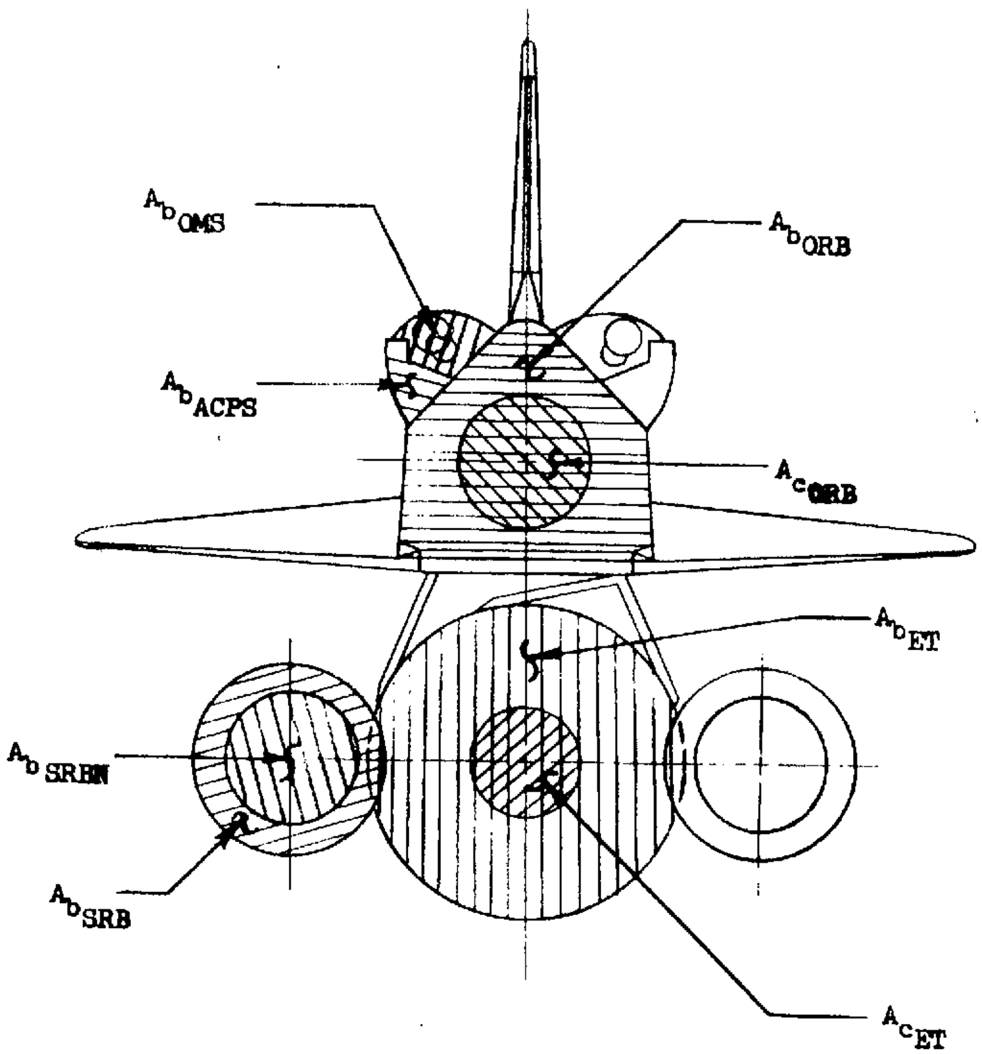
f. External Tank Nose Variation, T_{19}

Figure 2. - Continued.



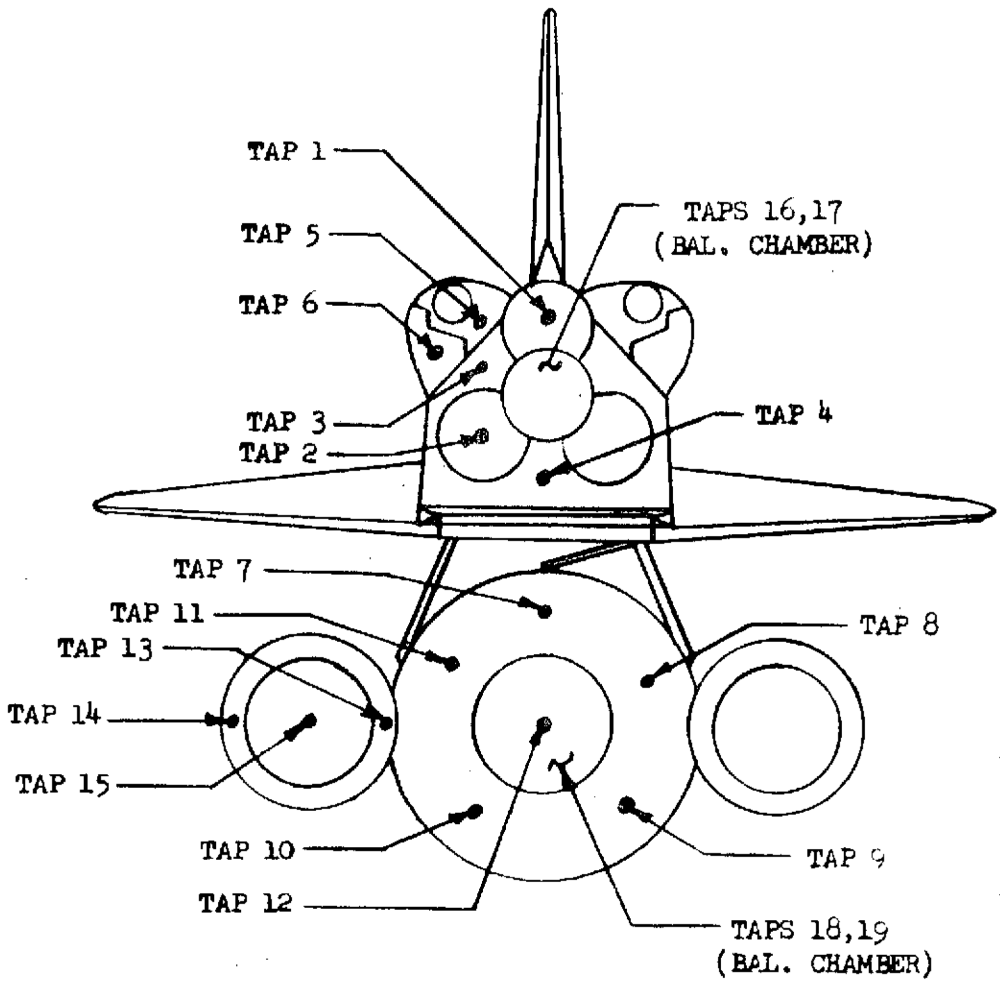
g. Solid Rocket Booster, S_{12}

Figure 2. - Continued.



h. Definition of Model Base and Cavity Areas

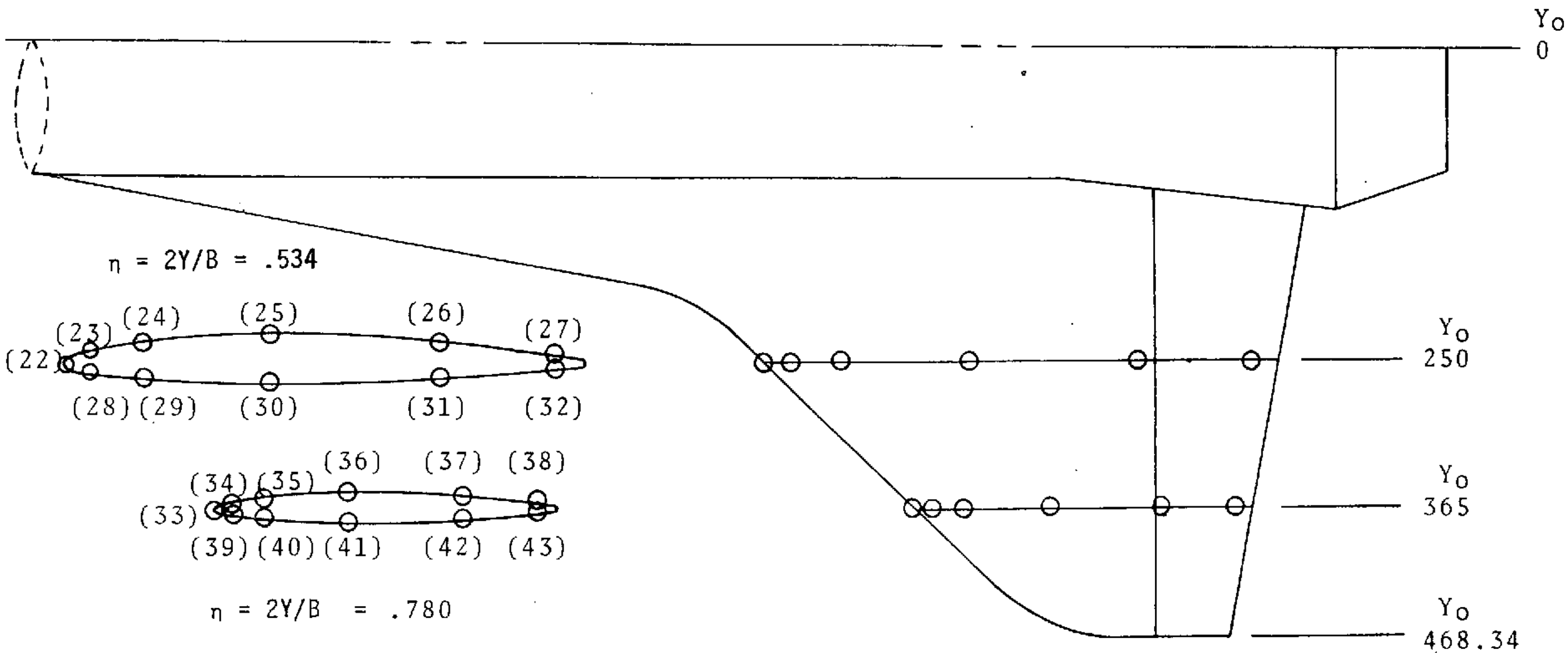
Figure 2. - Continued.



NOTE: Refer to Data Reduction section for pressure manifold system.

i. **Base Pressure Tap Locations**

Figure 2. - Continued.



Notes:

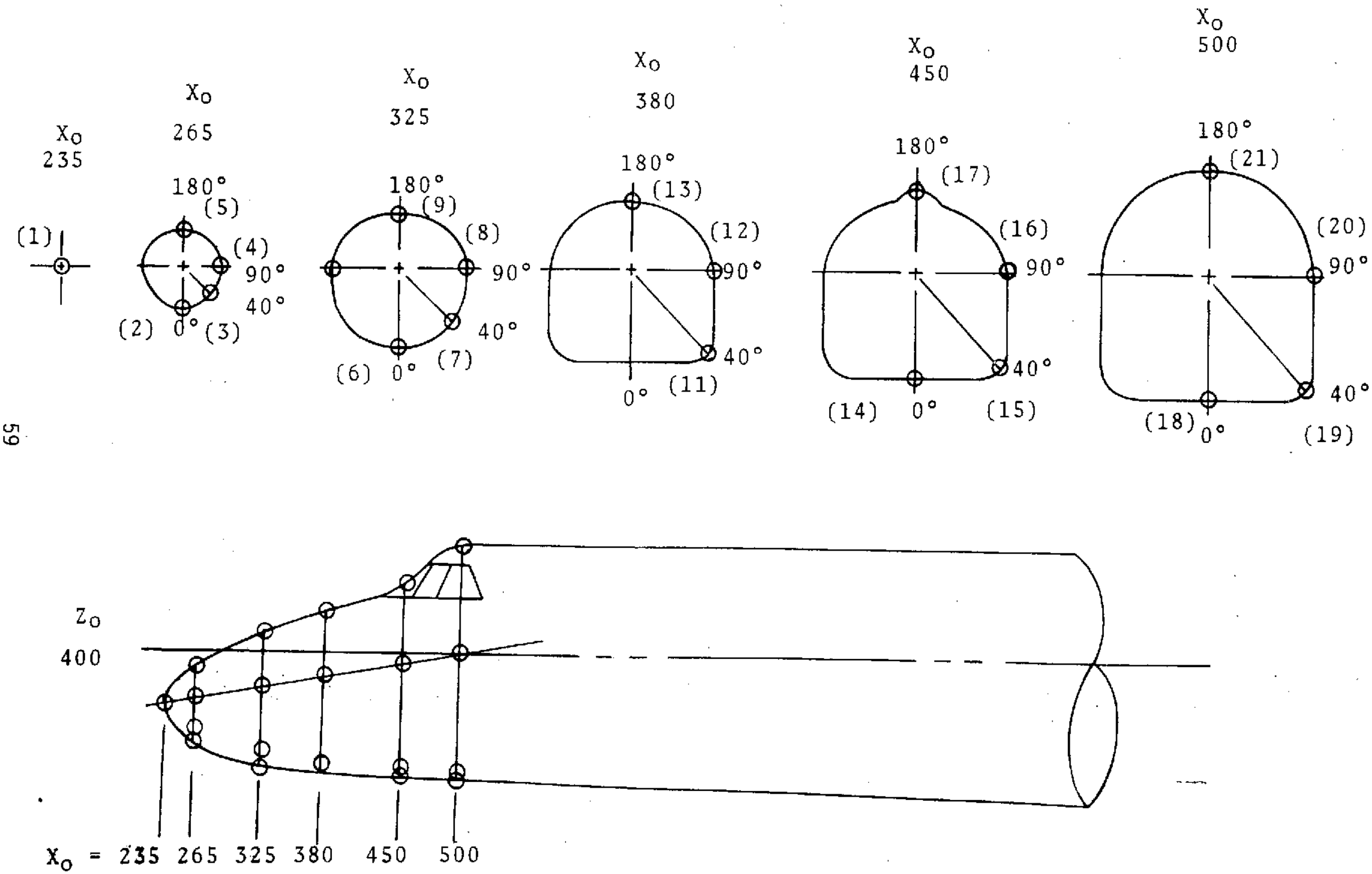
(1) Full Scale Dimensions
(2) Pressure Orifices on Left Hand Side of Model
(3) X/c = 0,.05, .15, .40, .725, and .95

j. Wing Pressure Orifice Locations

Figure 2. - Continued.

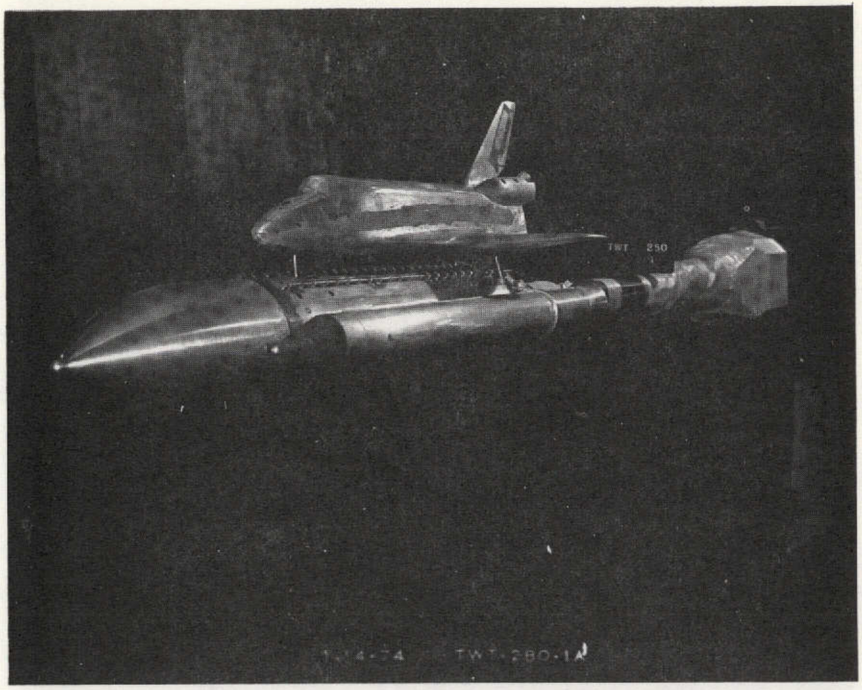
Notes:

(1) All Dimensions Full Scale
(2) Pressure Orifices on Left Hand Side of Model

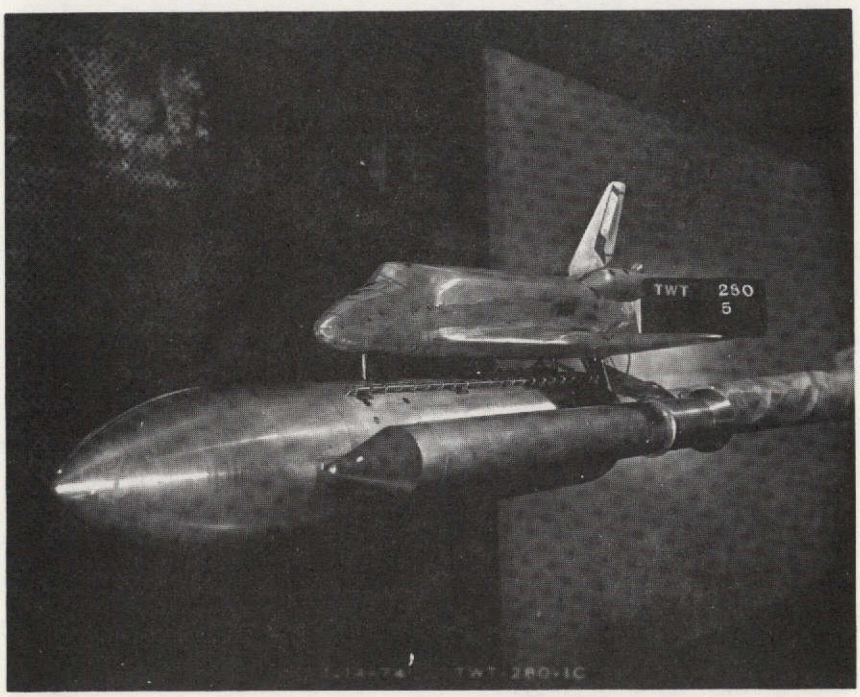


k. Fuselage Pressure Orifice Locations

Figure 2. - Concluded.



a. Front View, TWT Installation Configuration $O_1\ T_4\ S_1\ P_2\ P_7$



b. Front View, TWT Installation Configuration $O_1\ T_1\ S_1\ P_2\ P_6$

Figure 3. - Model Photographs

DATA FIGURES - FORCE

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ELEVON	RUDDER	SPDBRK	BDFLAP
(AF3A08)	○	IA69	01 T4 S1 P2 P7	.000	.000	.000	.000
(AF3A12)	□	IA69	01 T1 S1 P2 P6	.000	.000	.000	.000

REFERENCE INFORMATION

SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

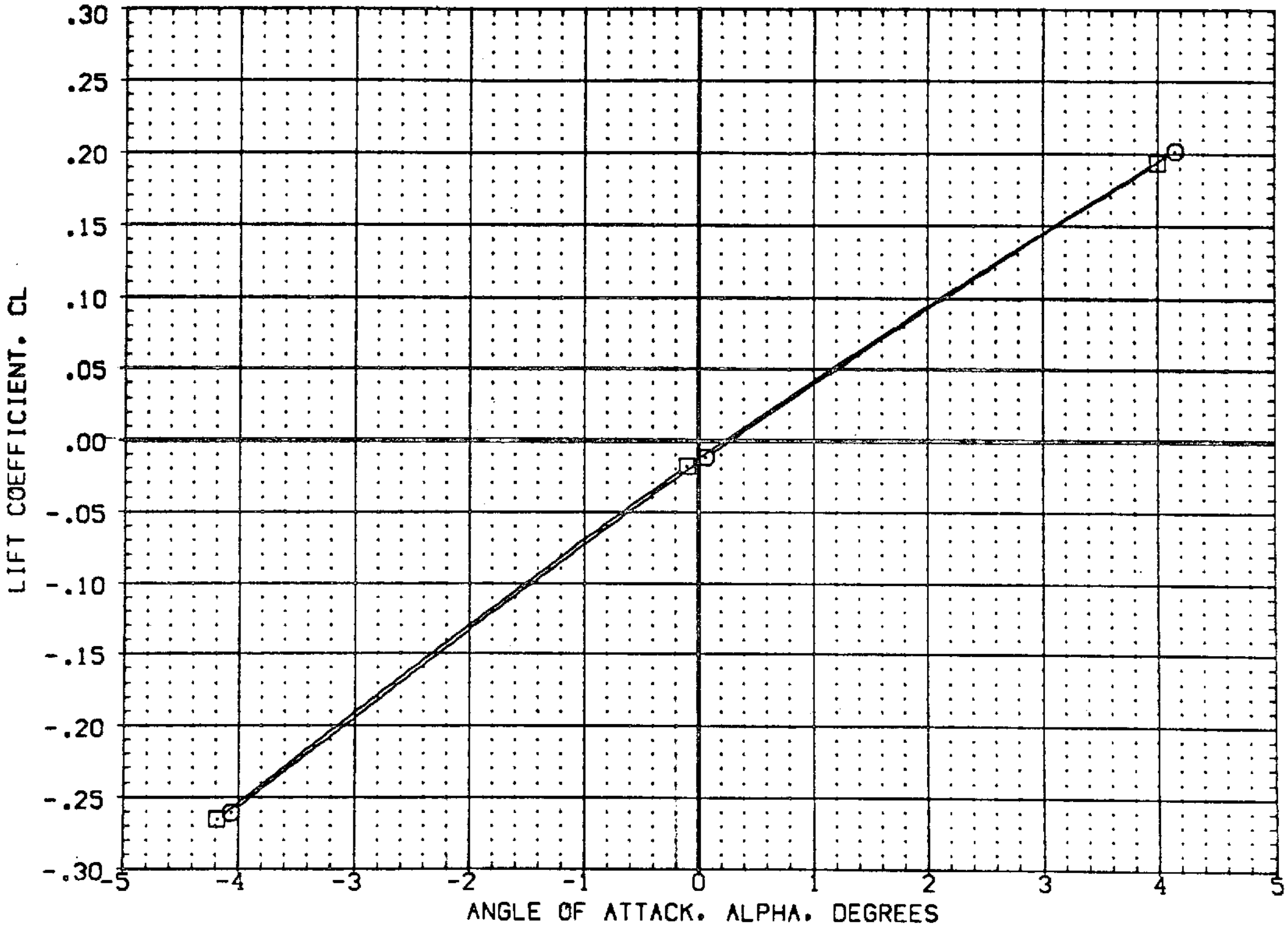


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ELEVON	RUDDER	SPDBRK	BDFLAP
(AF3A08)	○	IA69	01 T4 S1 P2 P7	.000	.000	.000	.000
(AF3A12)	□	IA69	01 T1 S1 P2 P6	.000	.000	.000	.000

REFERENCE INFORMATION

SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

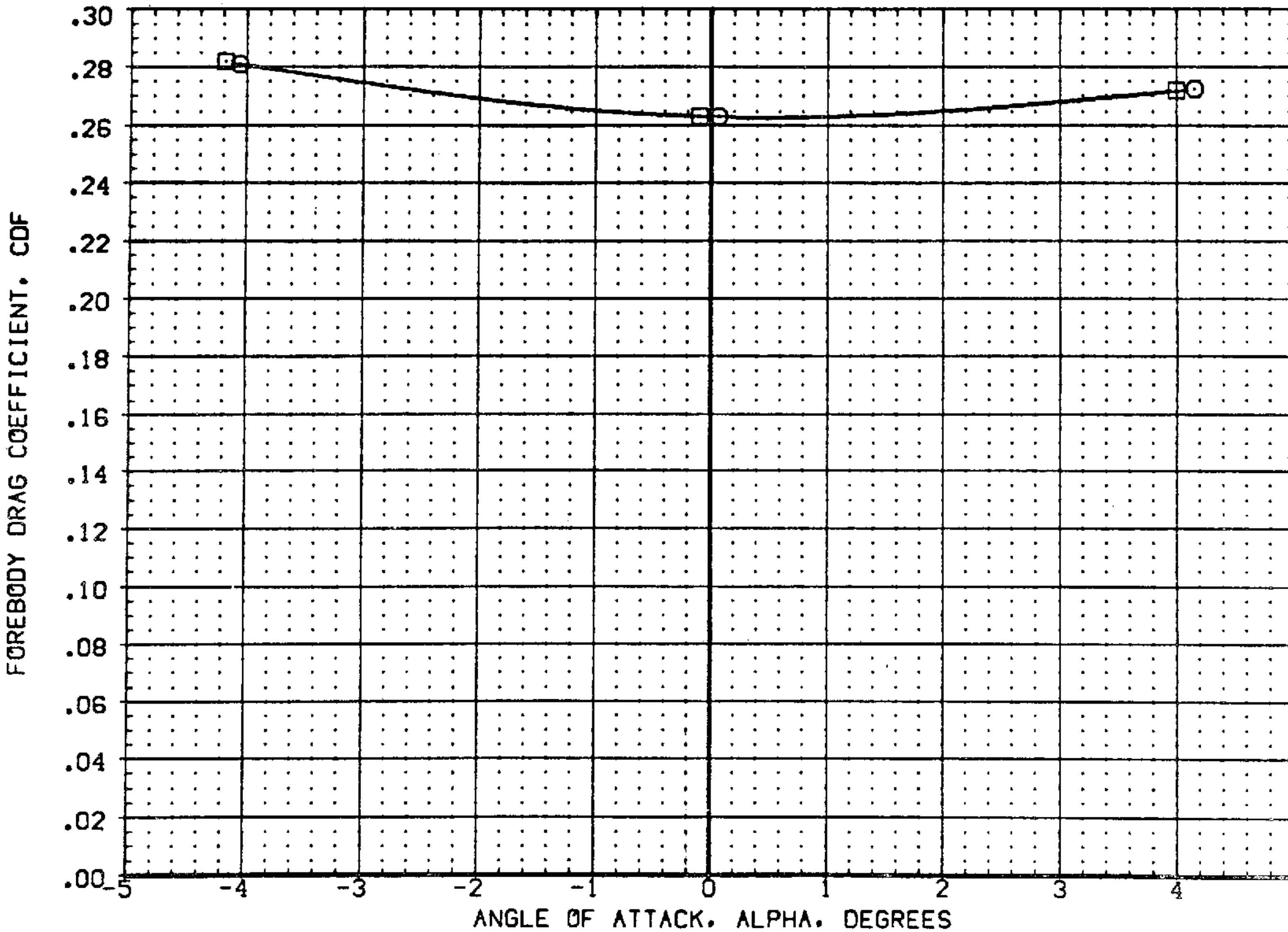


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(AF3A08)	○	IA69 O1 T4 S1 P2 P7
(AF3A12)	□	IA69 O1 T1 S1 P2 P6

ELEVON	RUDDER	SPDBRK	BDFLAP
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION

SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

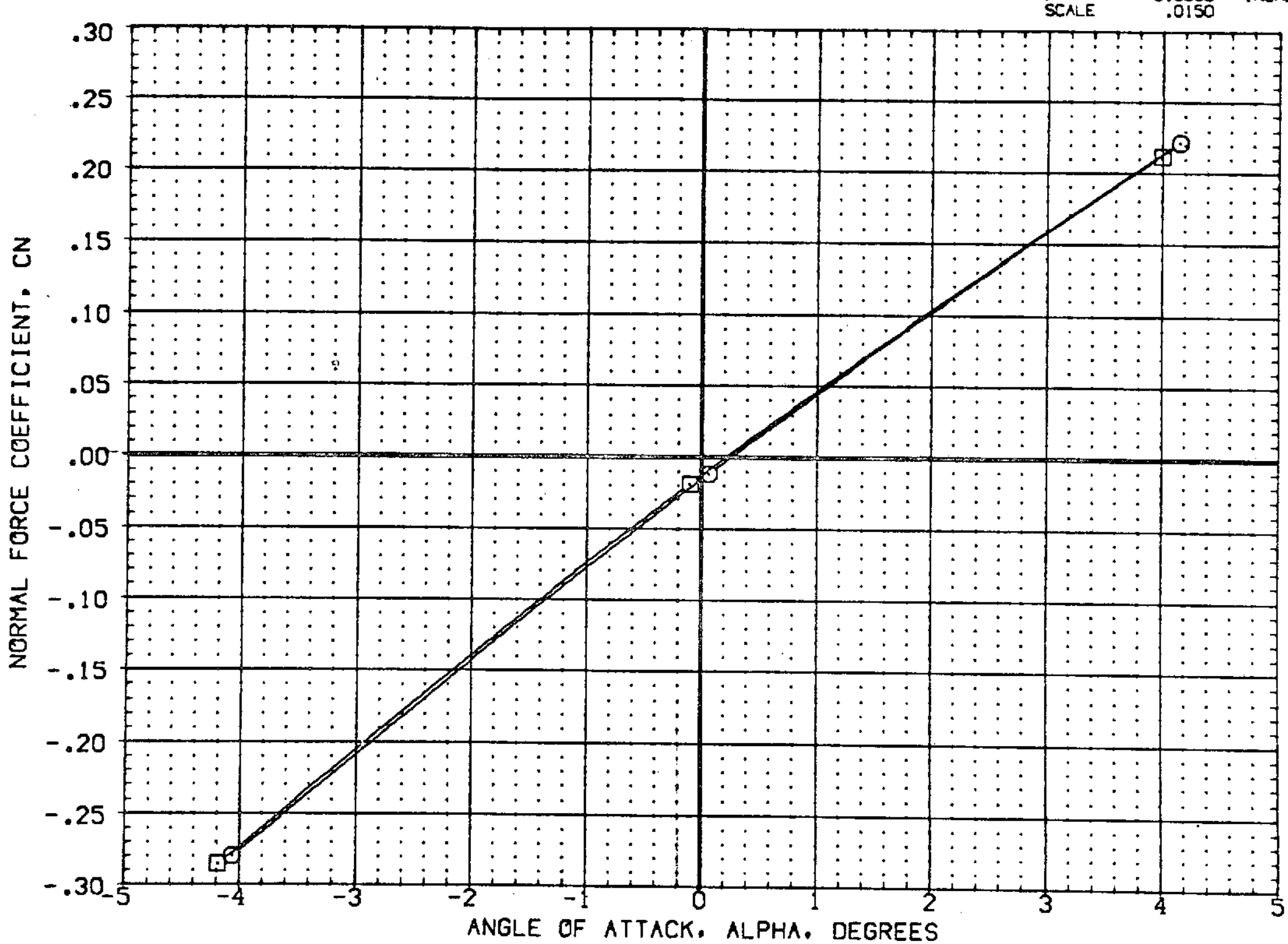


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ELEVON	RUDDER	SPDBRK	BDFLAP
(AF3A08)	○	IA69	O1 T4 S1 P2 P7	.000	.000	.000	.000
(AF3A12)	□	IA69	O1 T1 S1 P2 P6	.000	.000	.000	.000

REFERENCE INFORMATION

SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

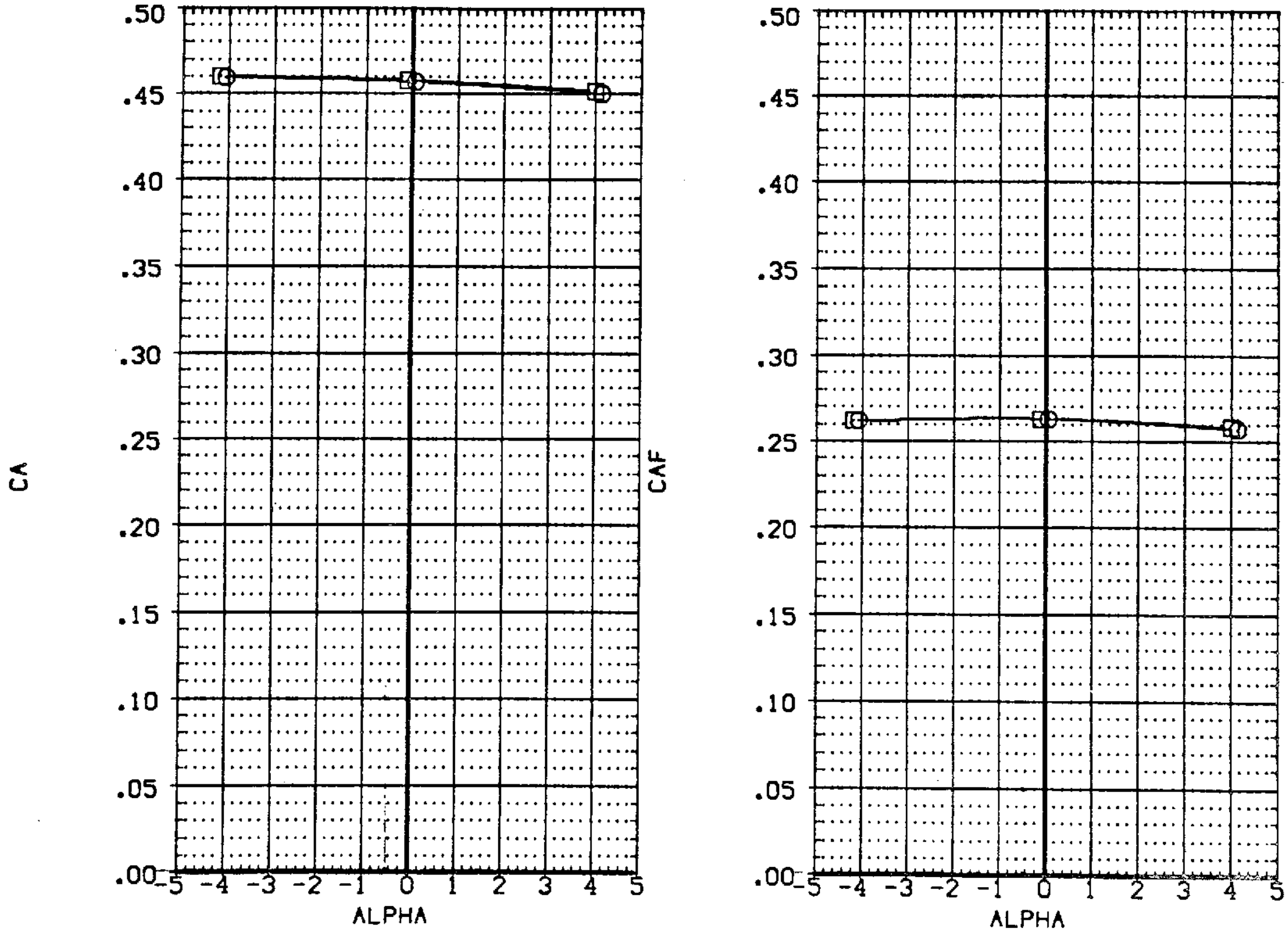


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.
(A)MACH = 1.22

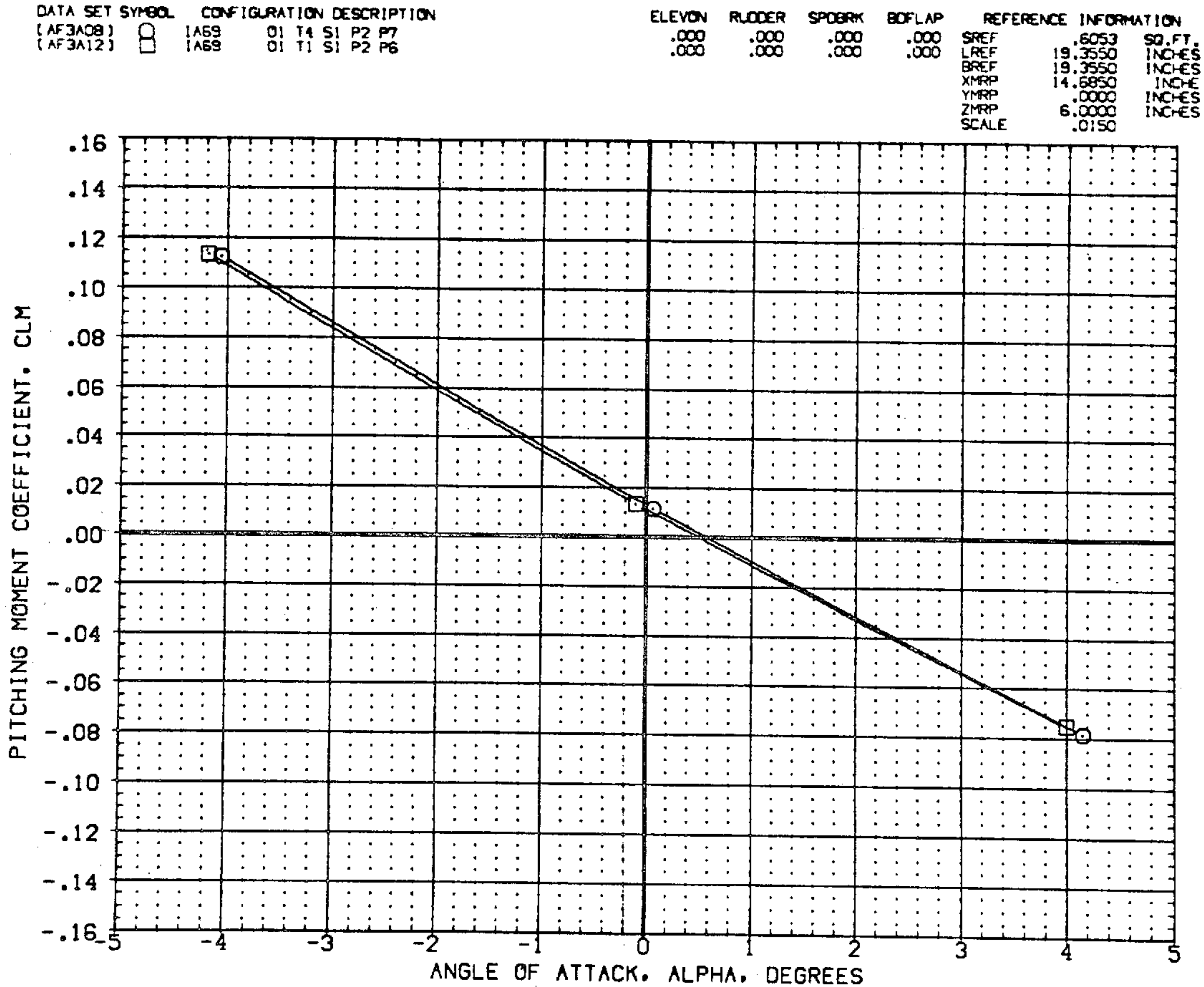


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ELEVON	RUDDER	SPDBRK	BDFLAP
(AF3A08)	○	IA69	01 T4 S1 P2 P7	.000	.000	.000	.000
(AF3A12)	□	IA69	01 T1 S1 P2 P6	.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

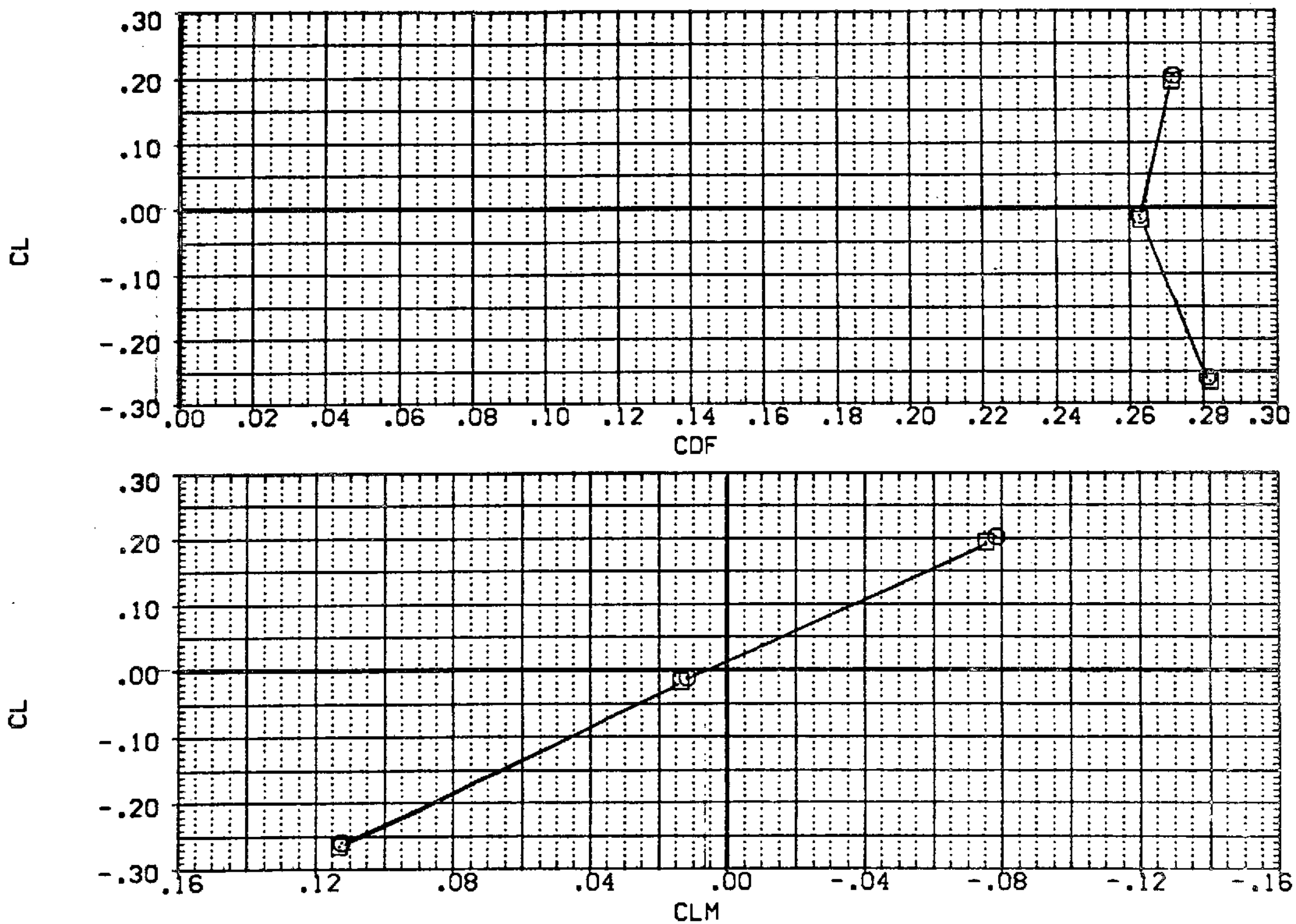


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ELEVON	RUDDER	SPDBRK	BDFLAP
(AF3A08)	○	IA69	01 T4 S1 P2 P7	.000	.000	.000	.000
(AF3A12)	□	IA69	01 T1 S1 P2 P6	.000	.000	.000	.000

REFERENCE INFORMATION

SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

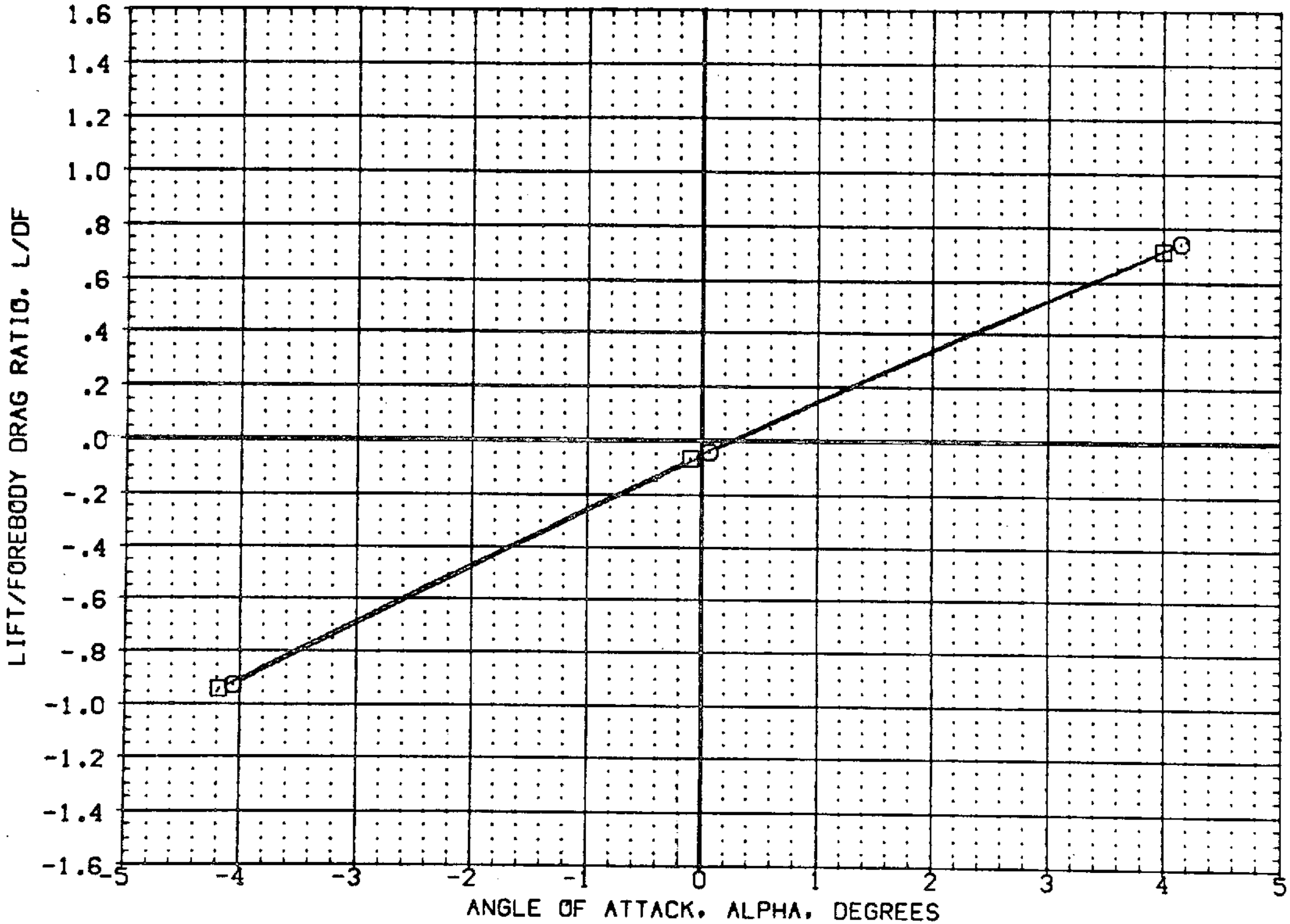


FIG 4 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LONGITUDINAL CHAR.

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	
(RF3A08)	○	IA69	O1 T4 S1 P2 P7
(RF3A10)	□	IA69	O1 T4 S1 P2 P7
(RF3A12)	◇	IA69	O1 T1 S1 P2 P6
(RF3A11)	△	IA69	O1 T1 S1 P2 P6

BETA	RUDDER	SPDBRK	BDFLAP
.000	.000	.000	.000
4.000	.000	.000	.000
.000	.000	.000	.000
4.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

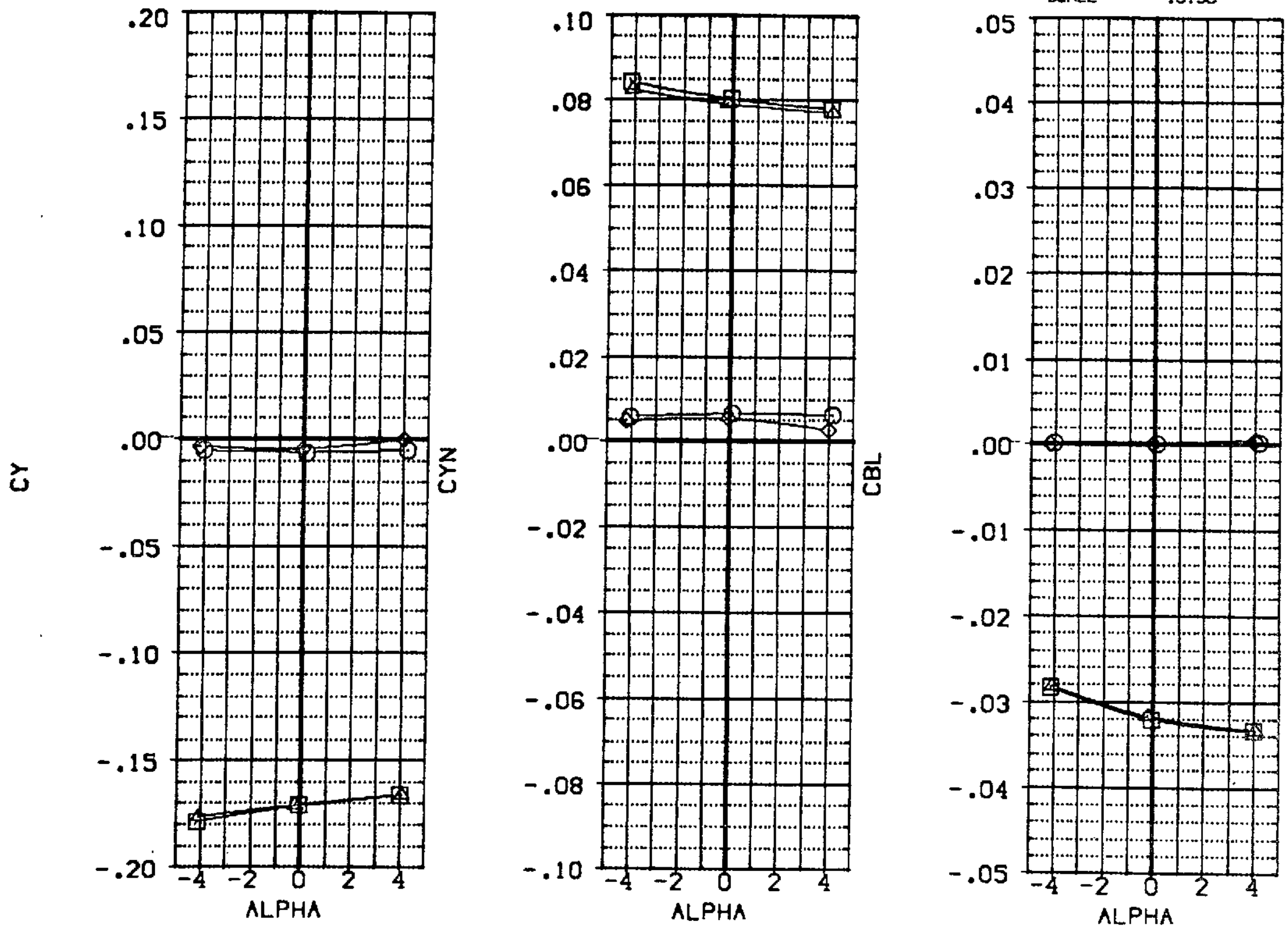


FIG 5 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LAT/DIR CHAR, BETA=0AND+4

(A)MACH = 1.22

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	RUDDER	SPDBRK	BDFLAP
(RF3A08)	○	IA69 O1 T4 S1 P2 P7	.000	.000	.000	.000
(RF3A07)	□	IA69 O1 T4 S1 P2 P7	-4.000	.000	.000	.000
(RF3A12)	◇	IA69 O1 T1 S1 P2 P6	.000	.000	.000	.000
(RF3A13)	△	IA69 O1 T1 S1 P2 P6	-4.000	.000	.000	.000

REFERENCE INFORMATION

SREF	.6053	SQ.FT.
LREF	19.3550	INCHES
BREF	19.3550	INCHES
XMRP	14.6850	INCHE
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

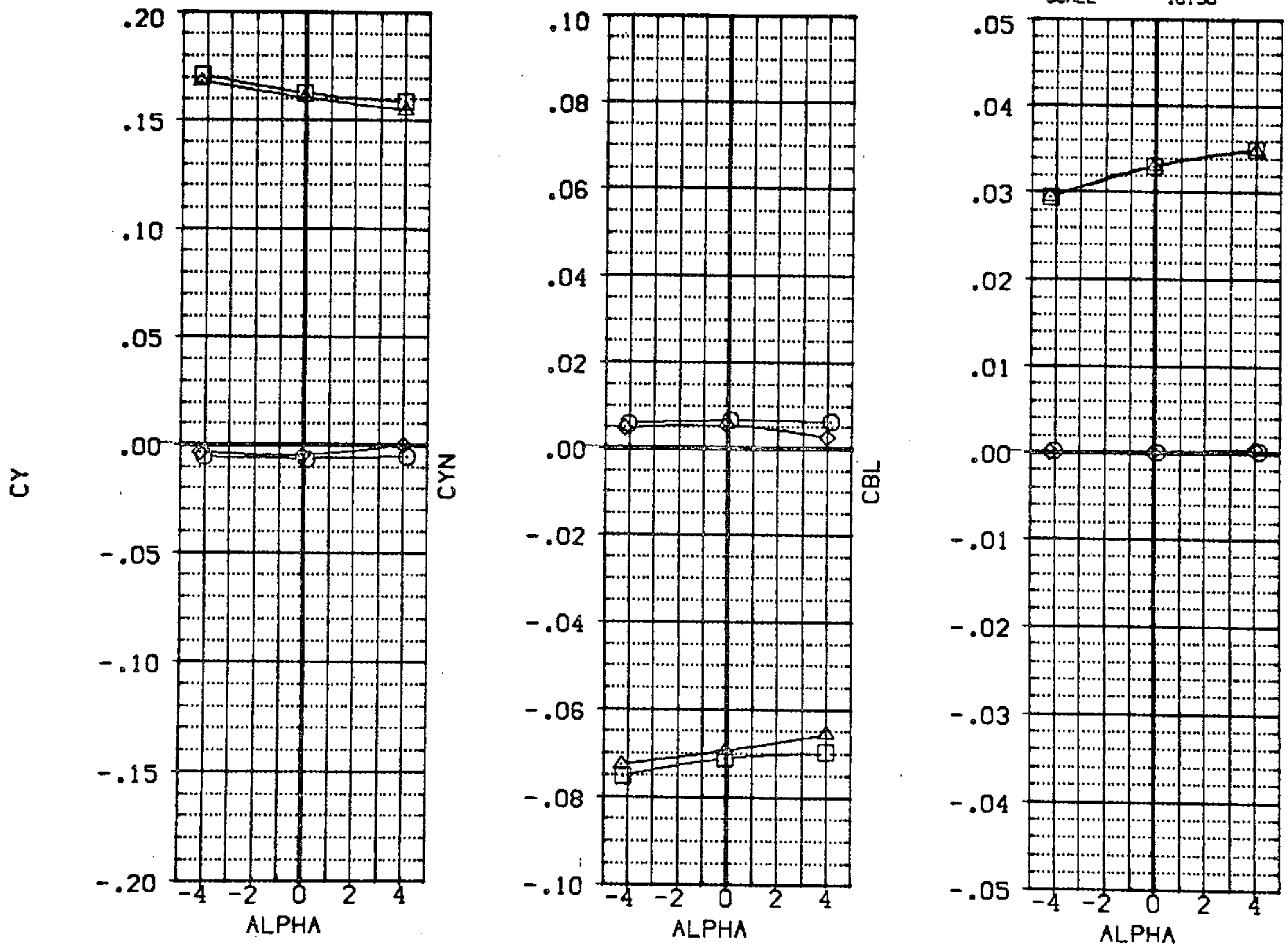


FIG 6 EFFECT OF EXTERNAL TANK NOSE CONFIGURATION, LAT/DIR CHAR, BETA=0AND-4

(A)MACH = 1.22

DATA FIGURES - PRESSURE

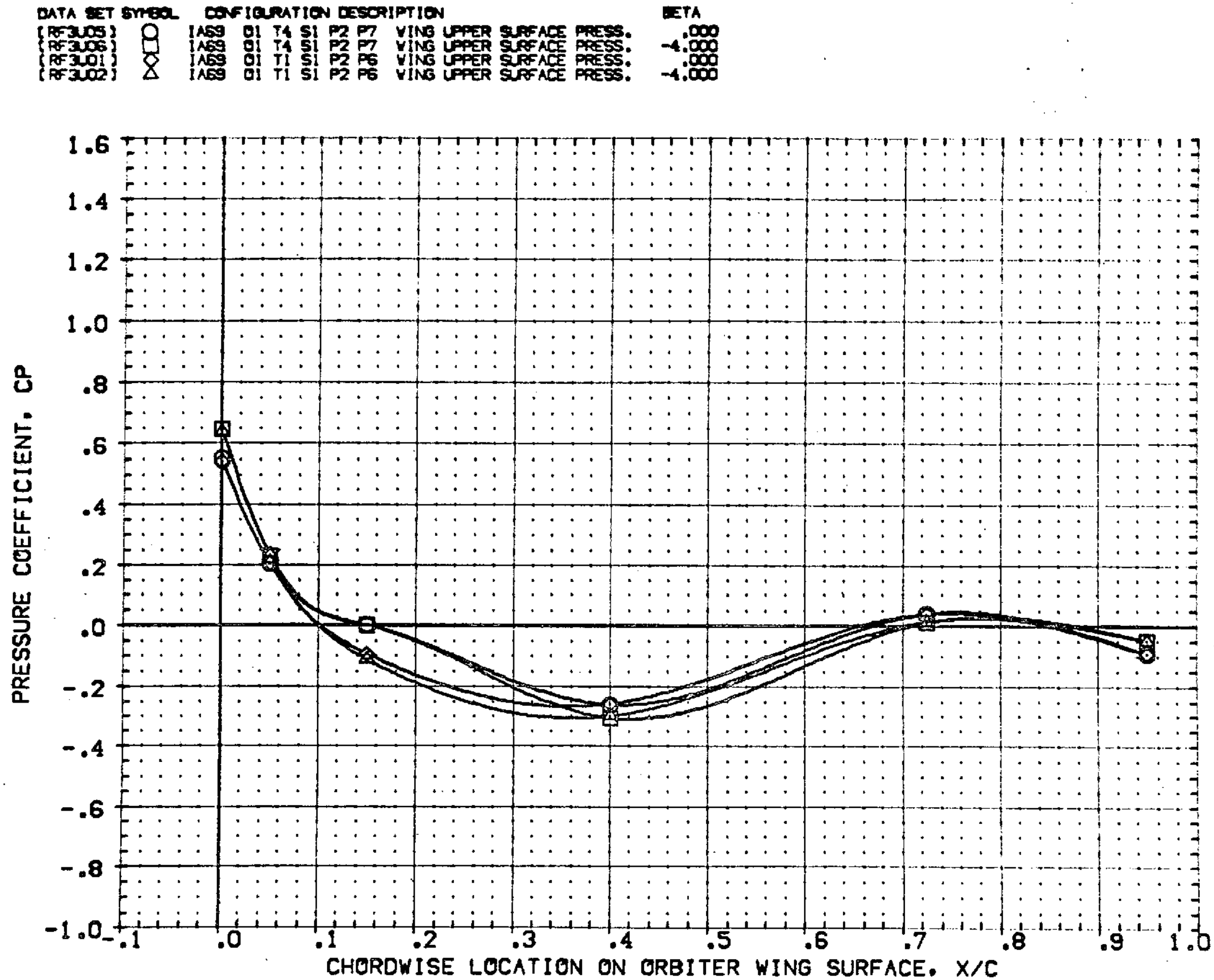


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

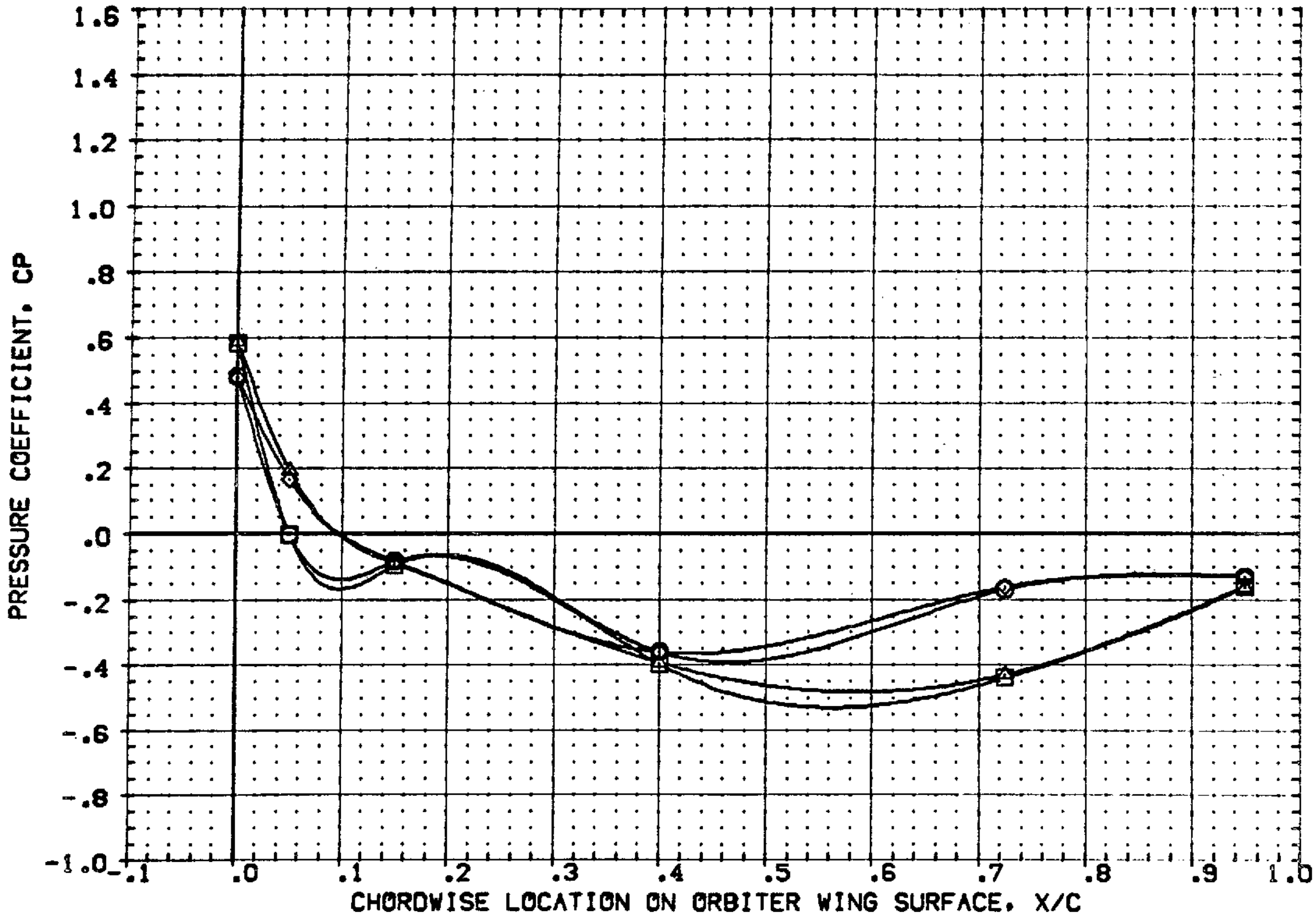


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

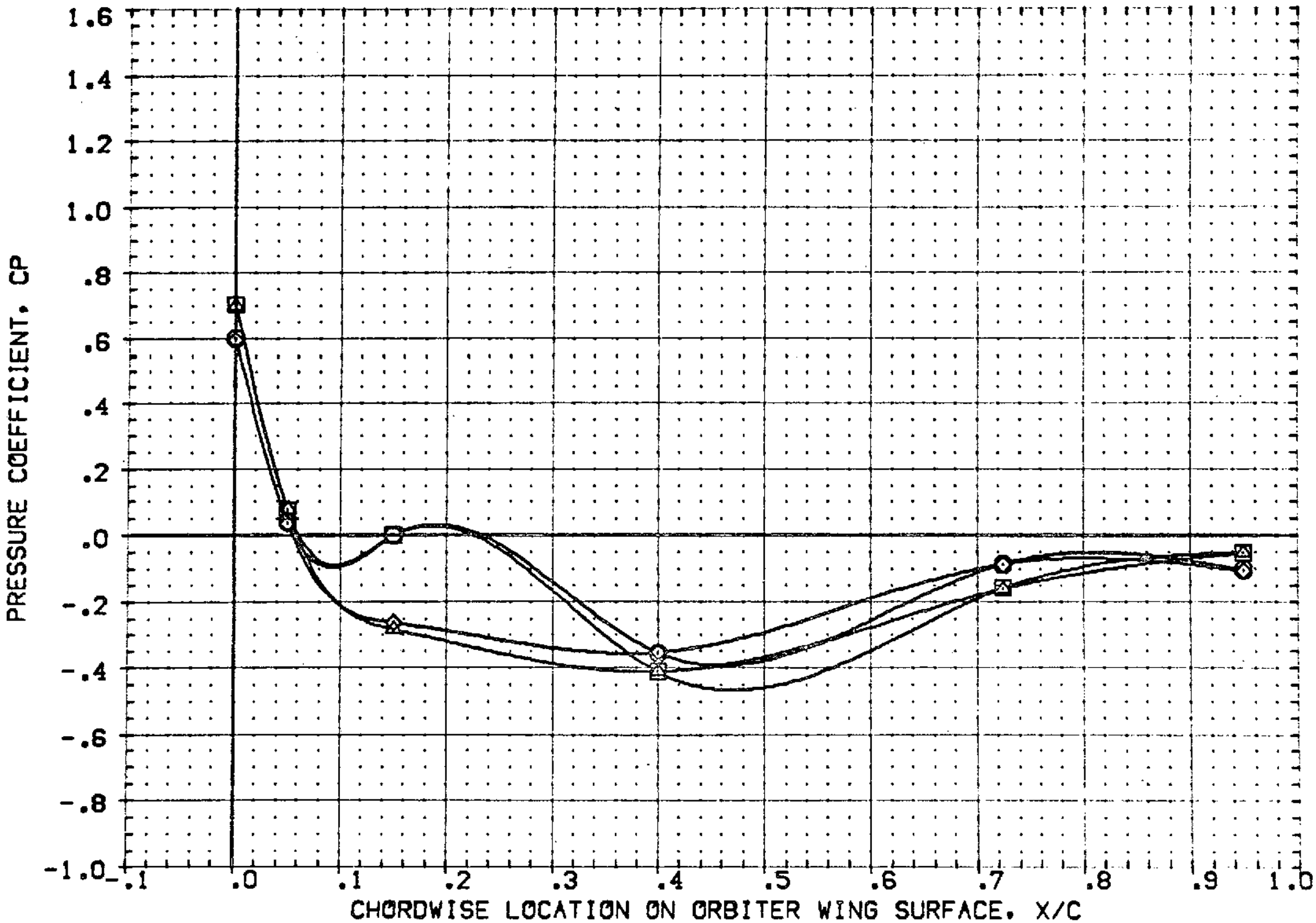


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3U05]	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
[RF3U06]	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
[RF3U01]	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
[RF3U02]	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

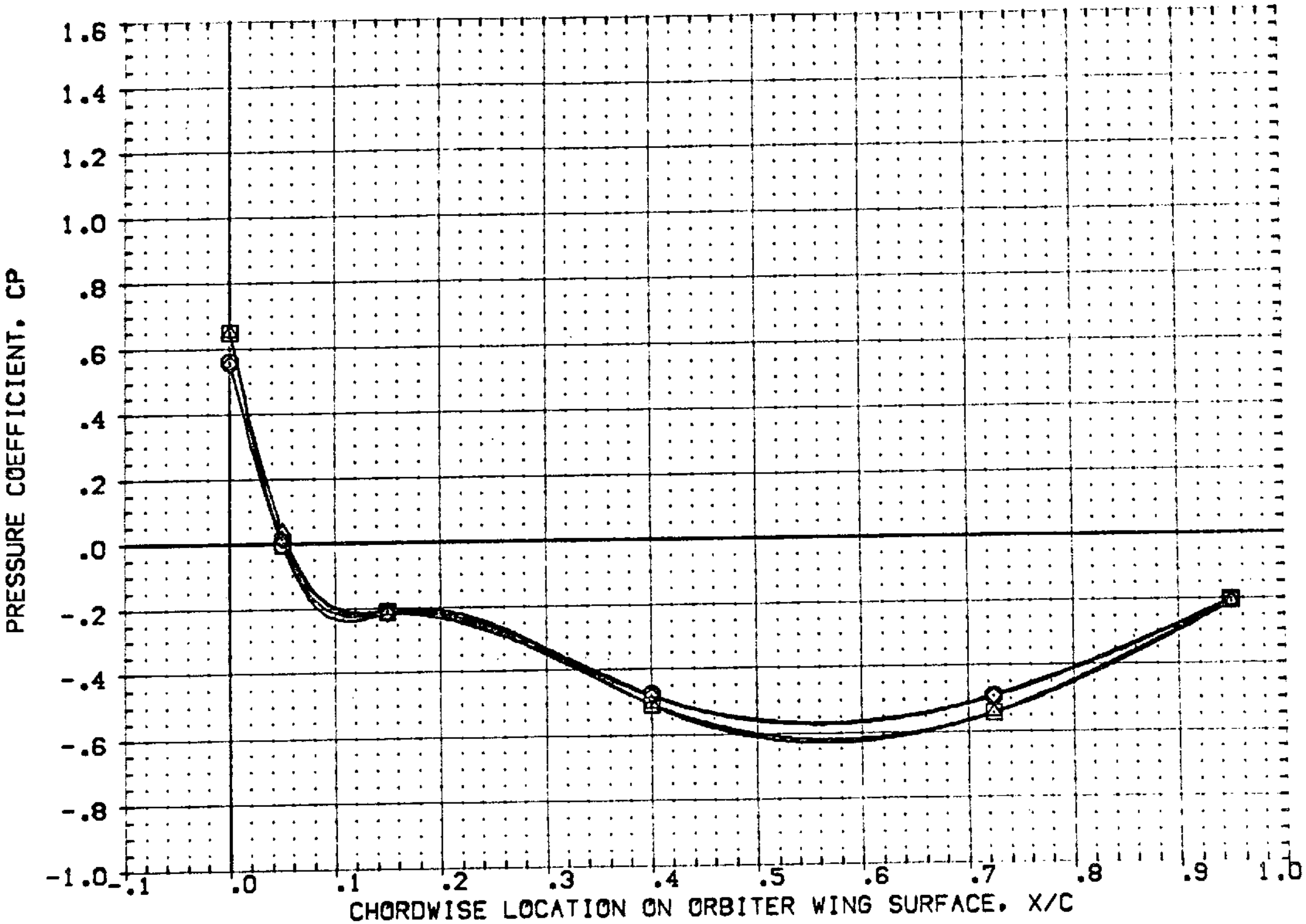


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

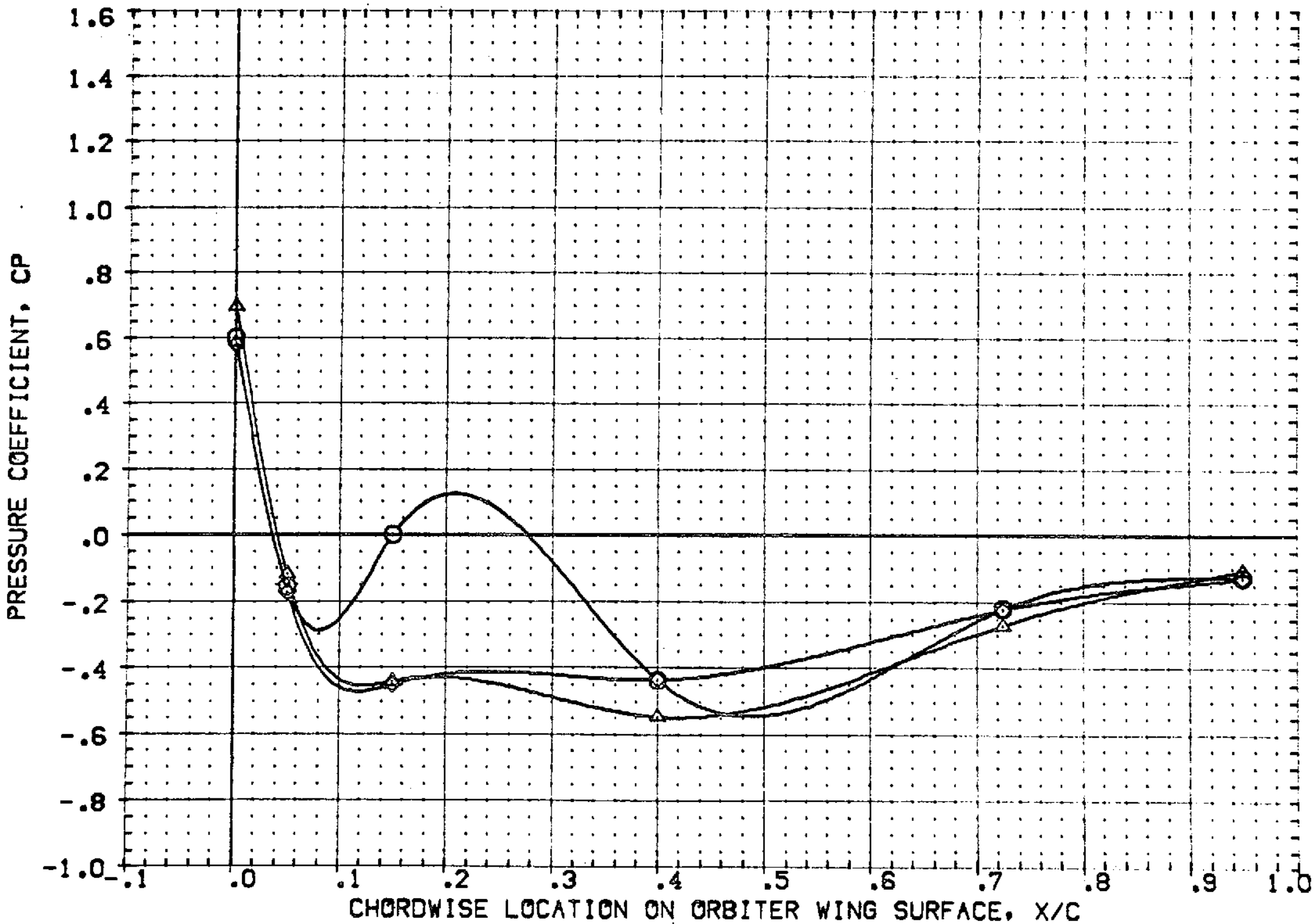


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

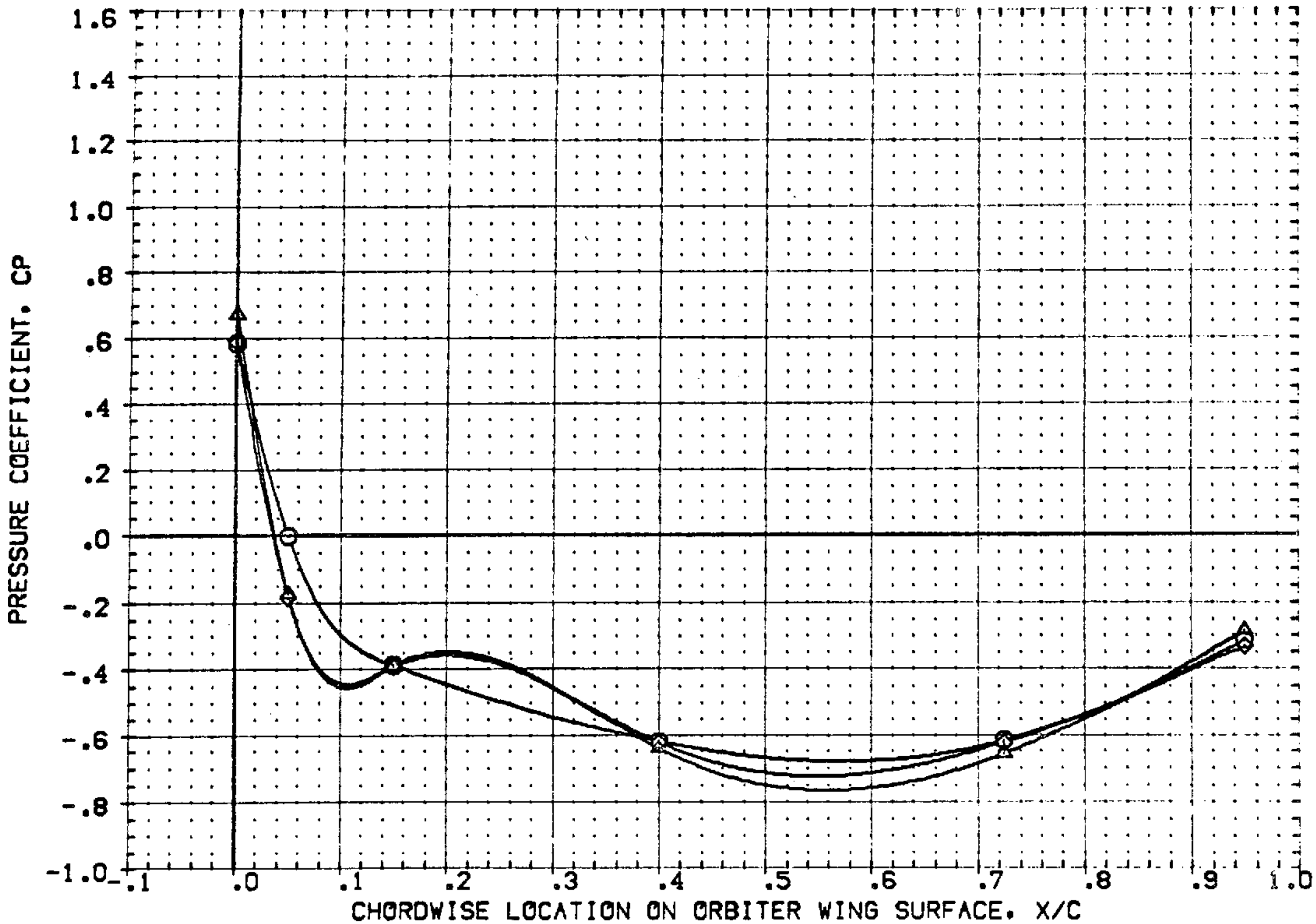


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3U05]	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
[RF3U06]	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
[RF3U01]	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
[RF3U02]	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

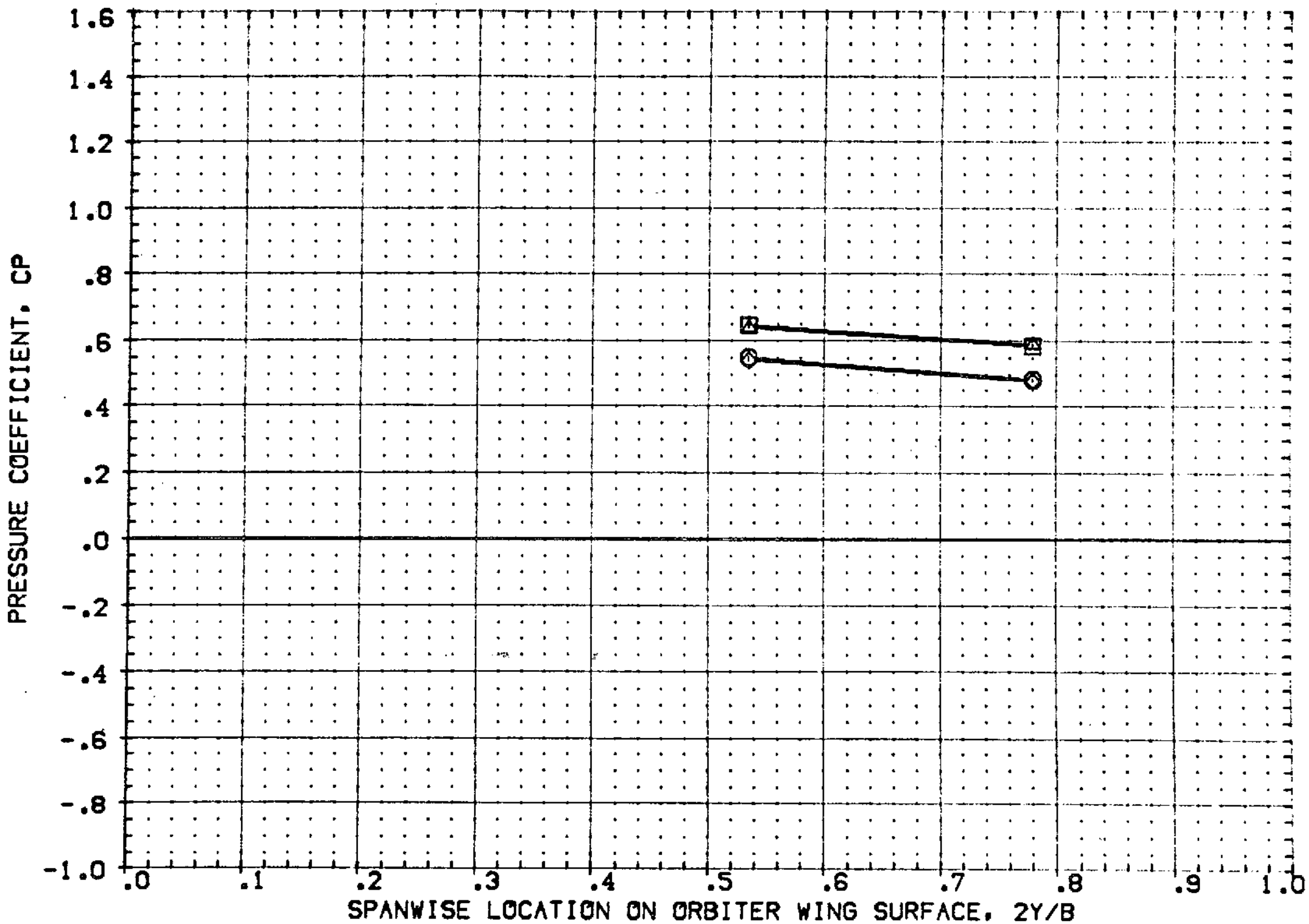


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

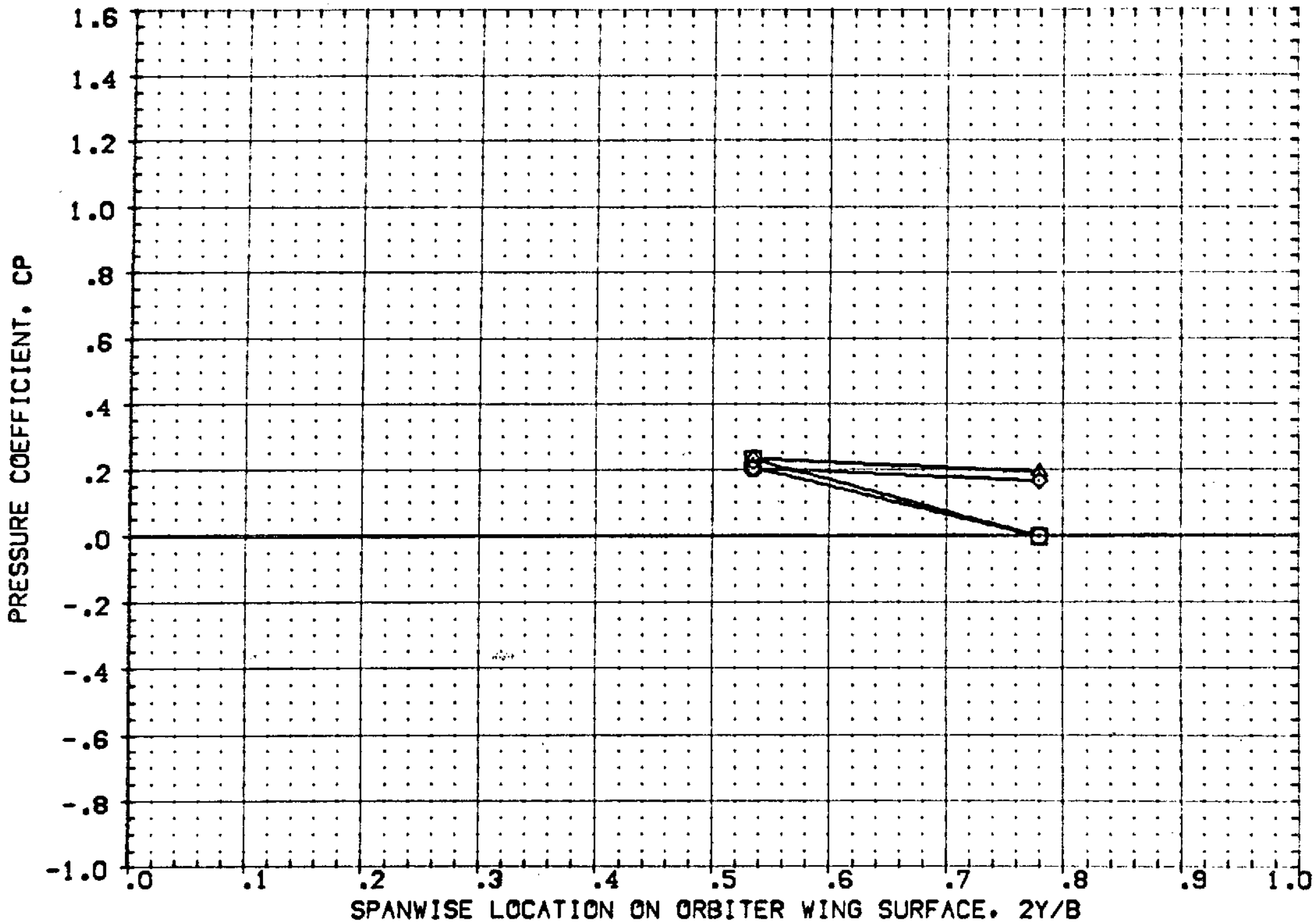


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

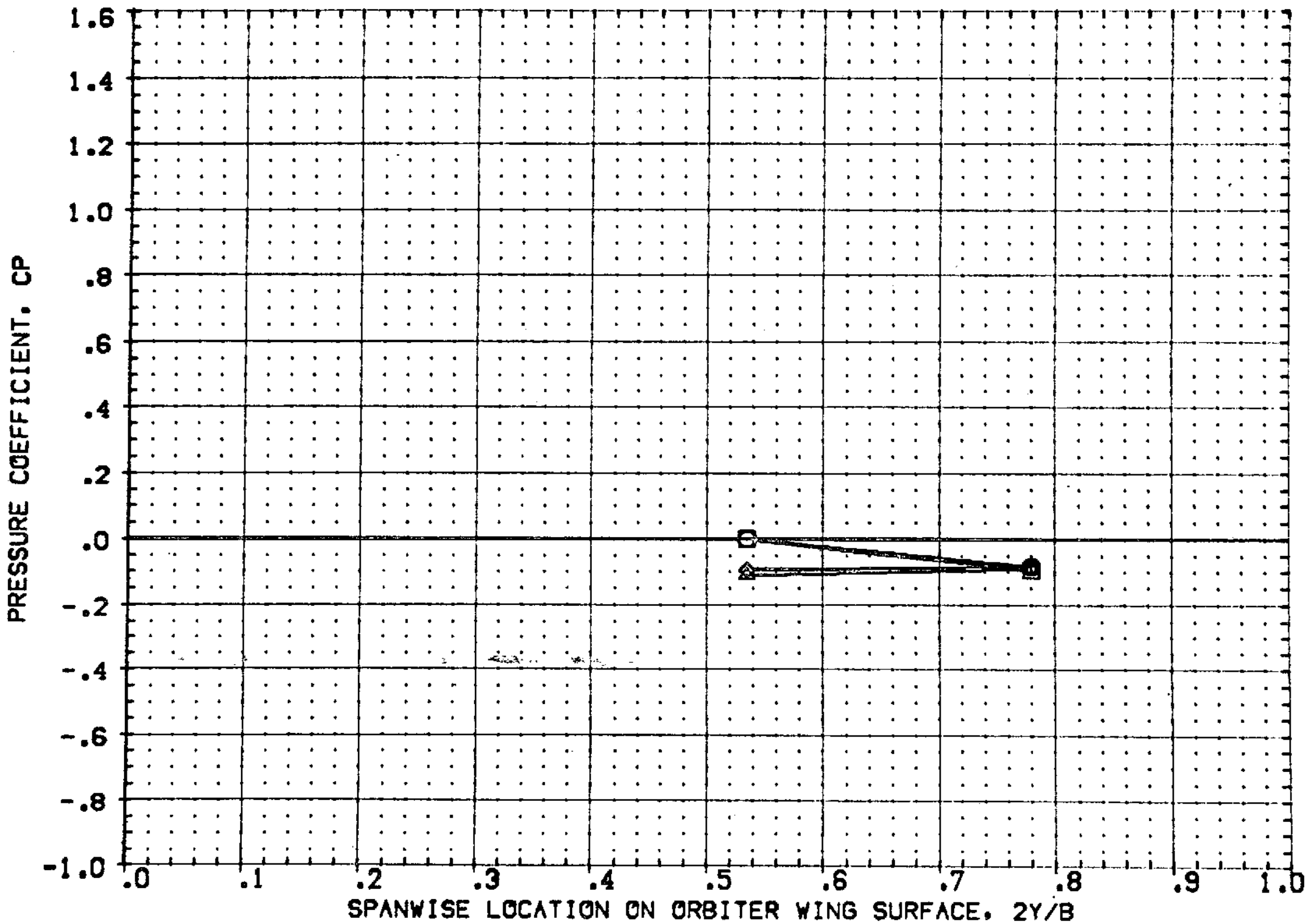


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .150

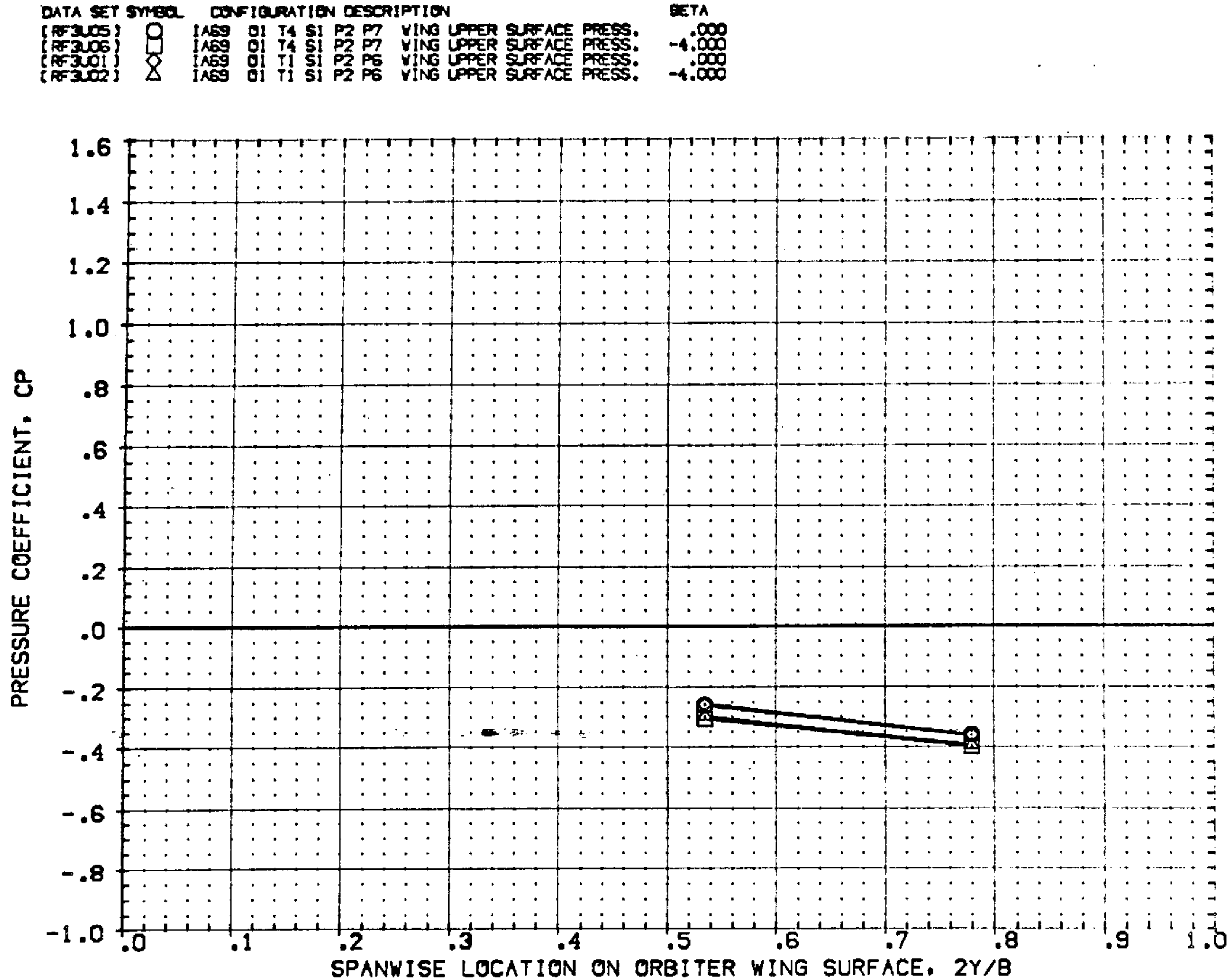


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

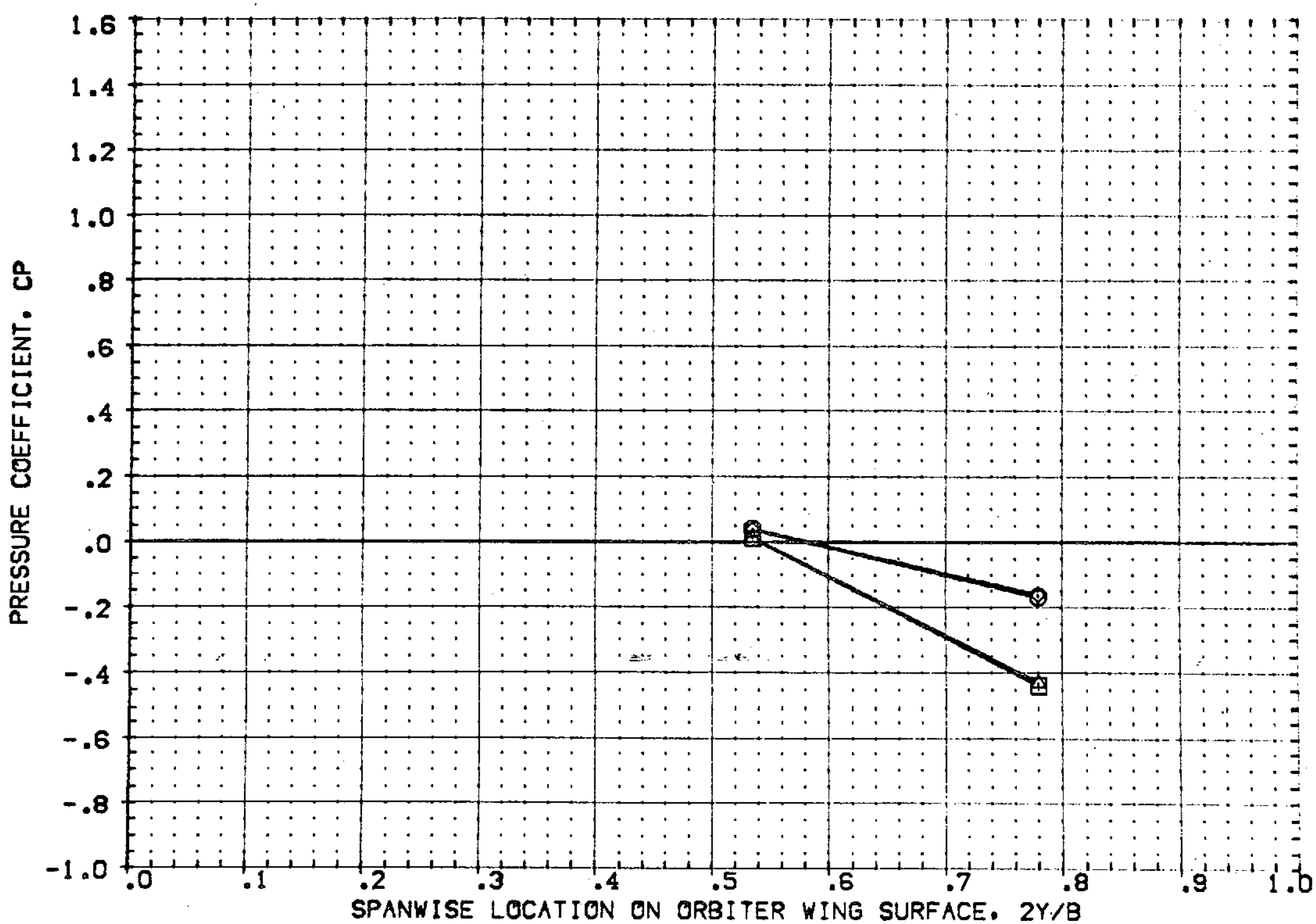


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

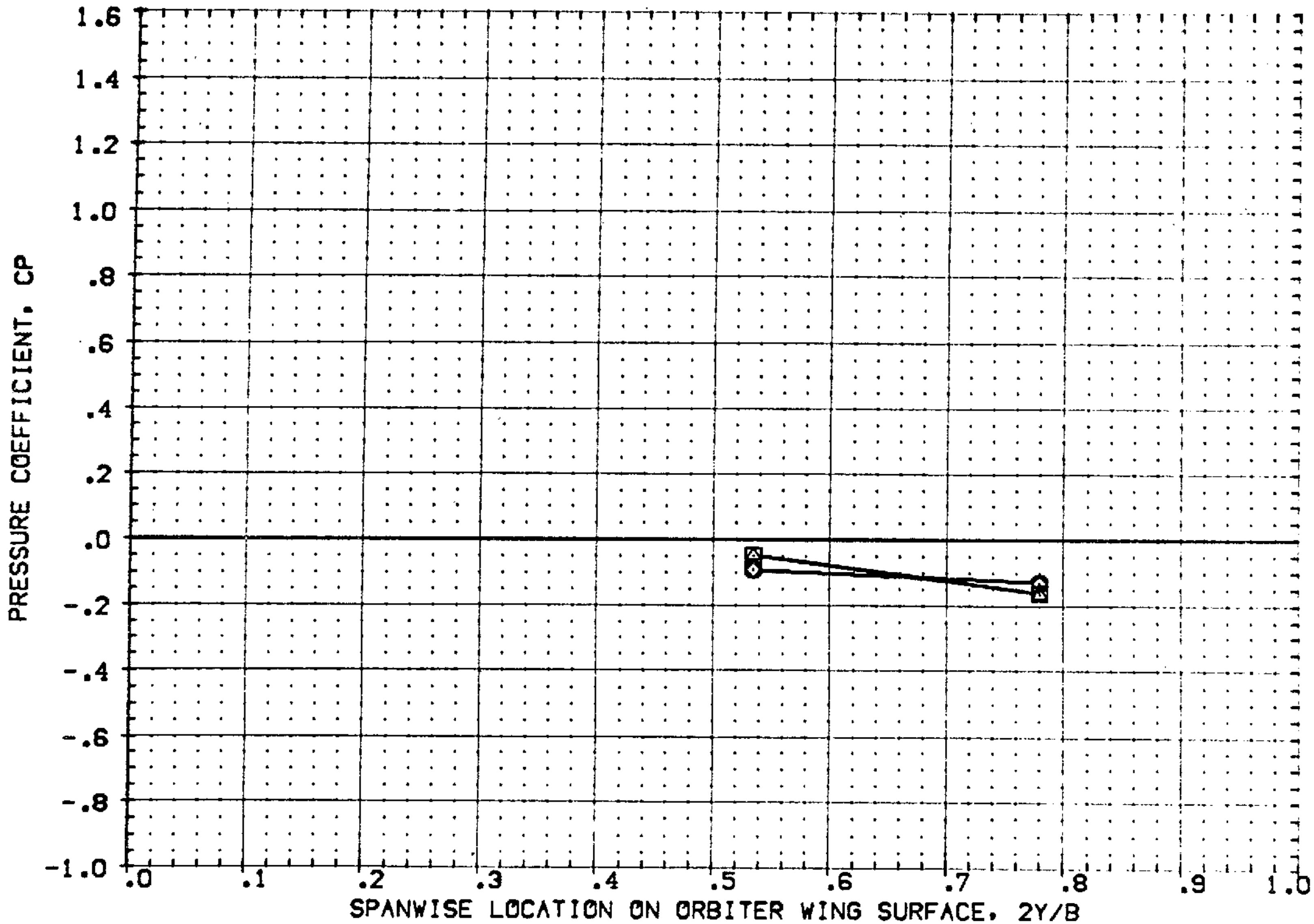


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

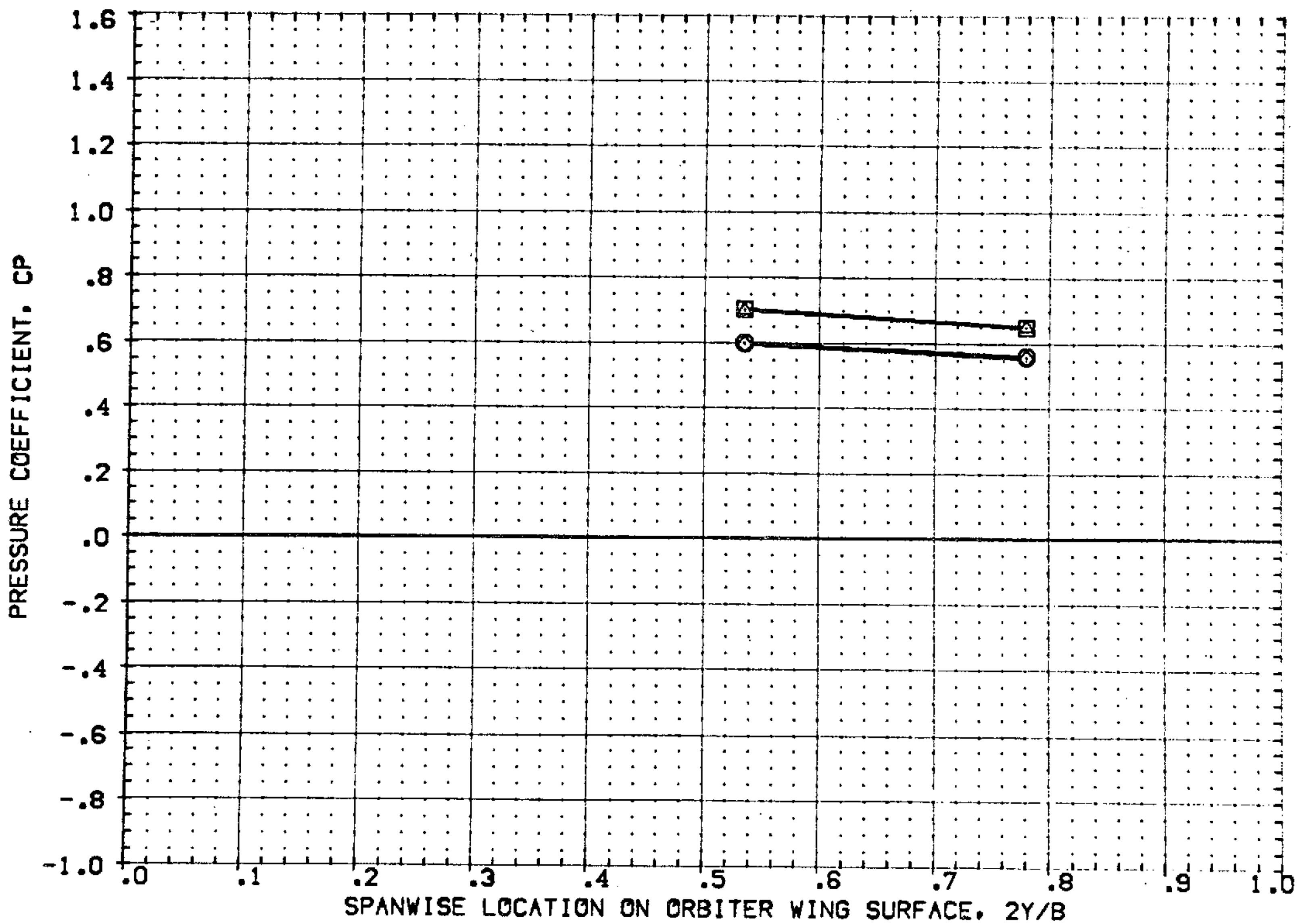


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

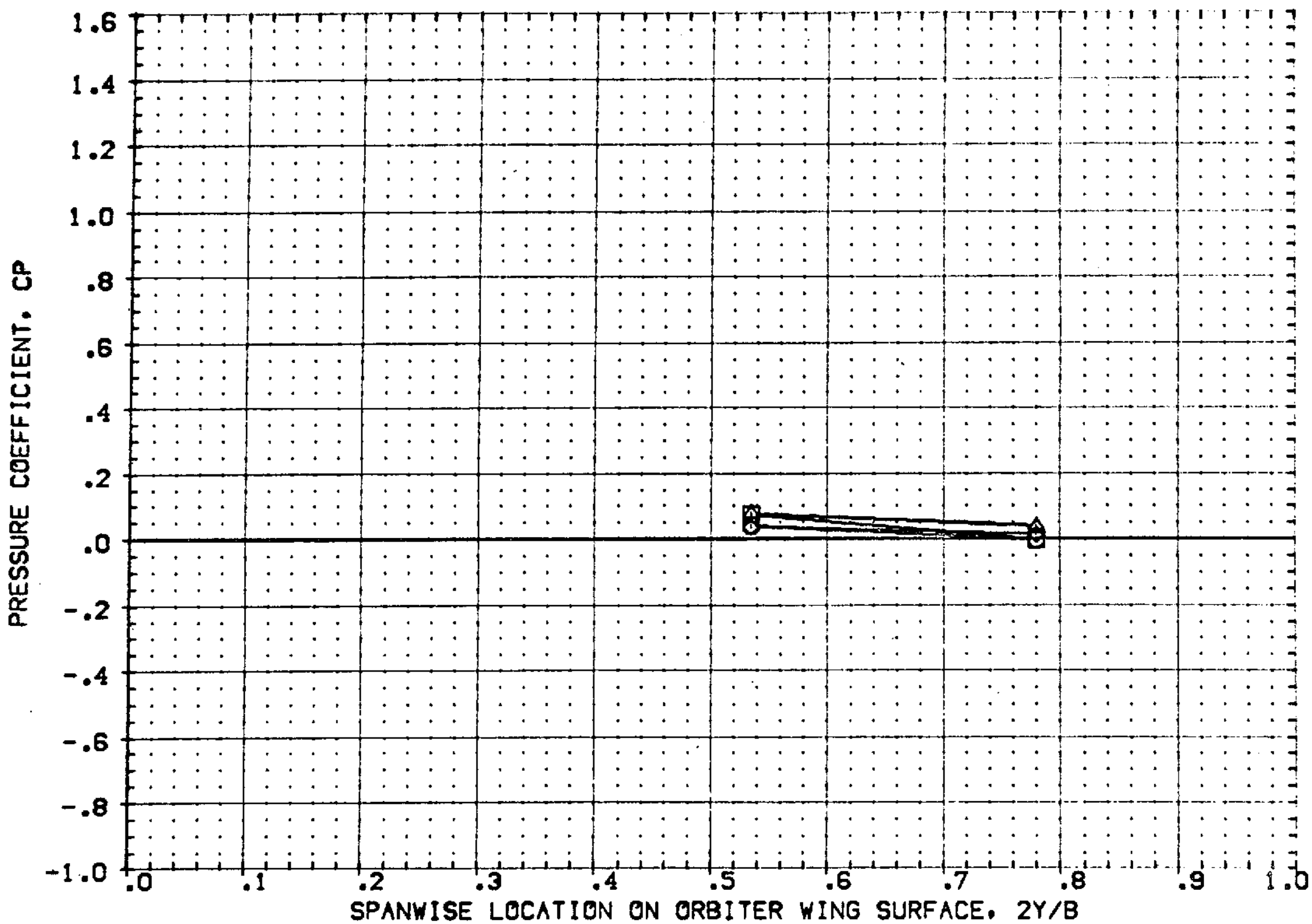


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3U05]	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
[RF3U06]	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
[RF3U01]	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
[RF3U02]	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

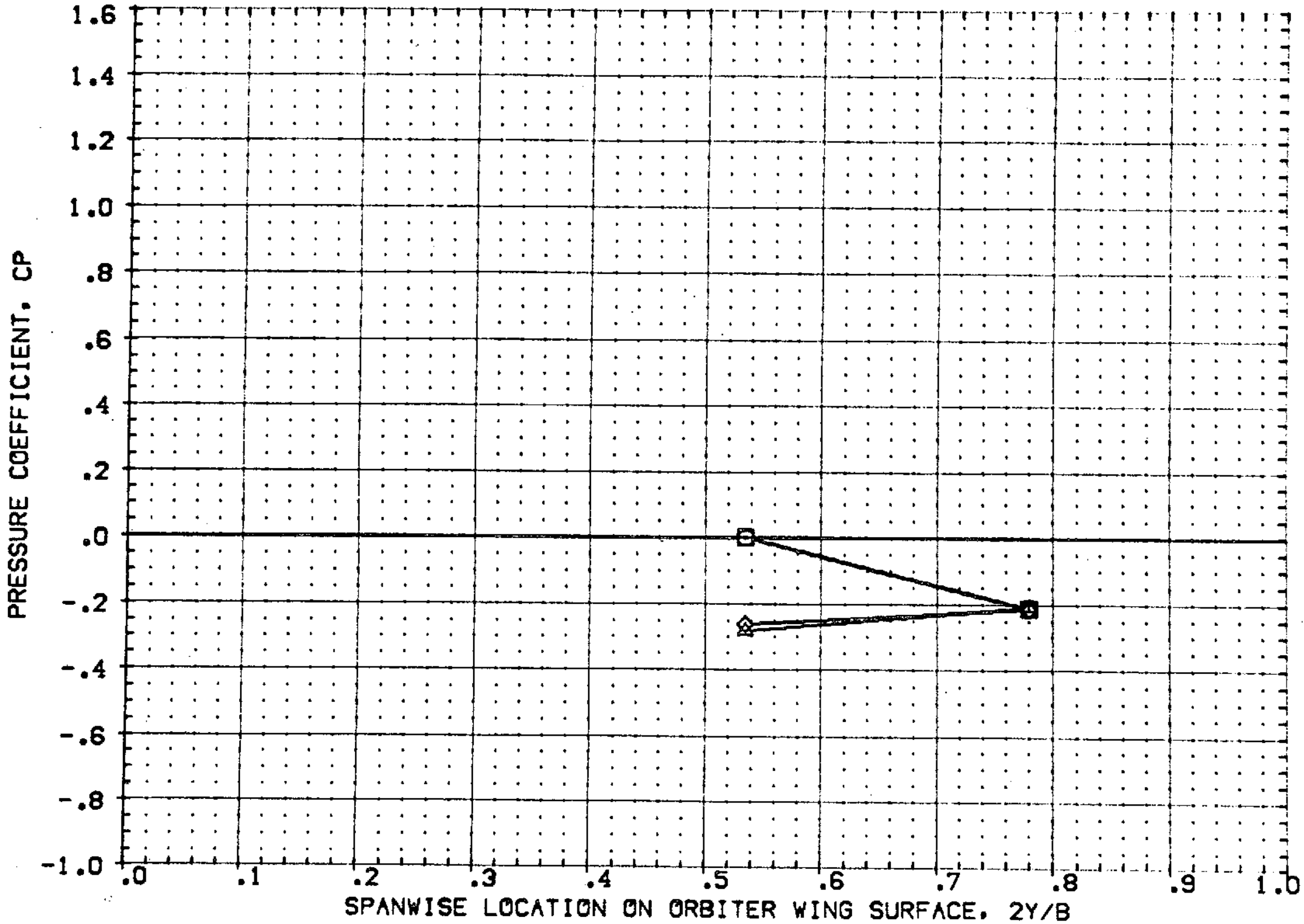


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

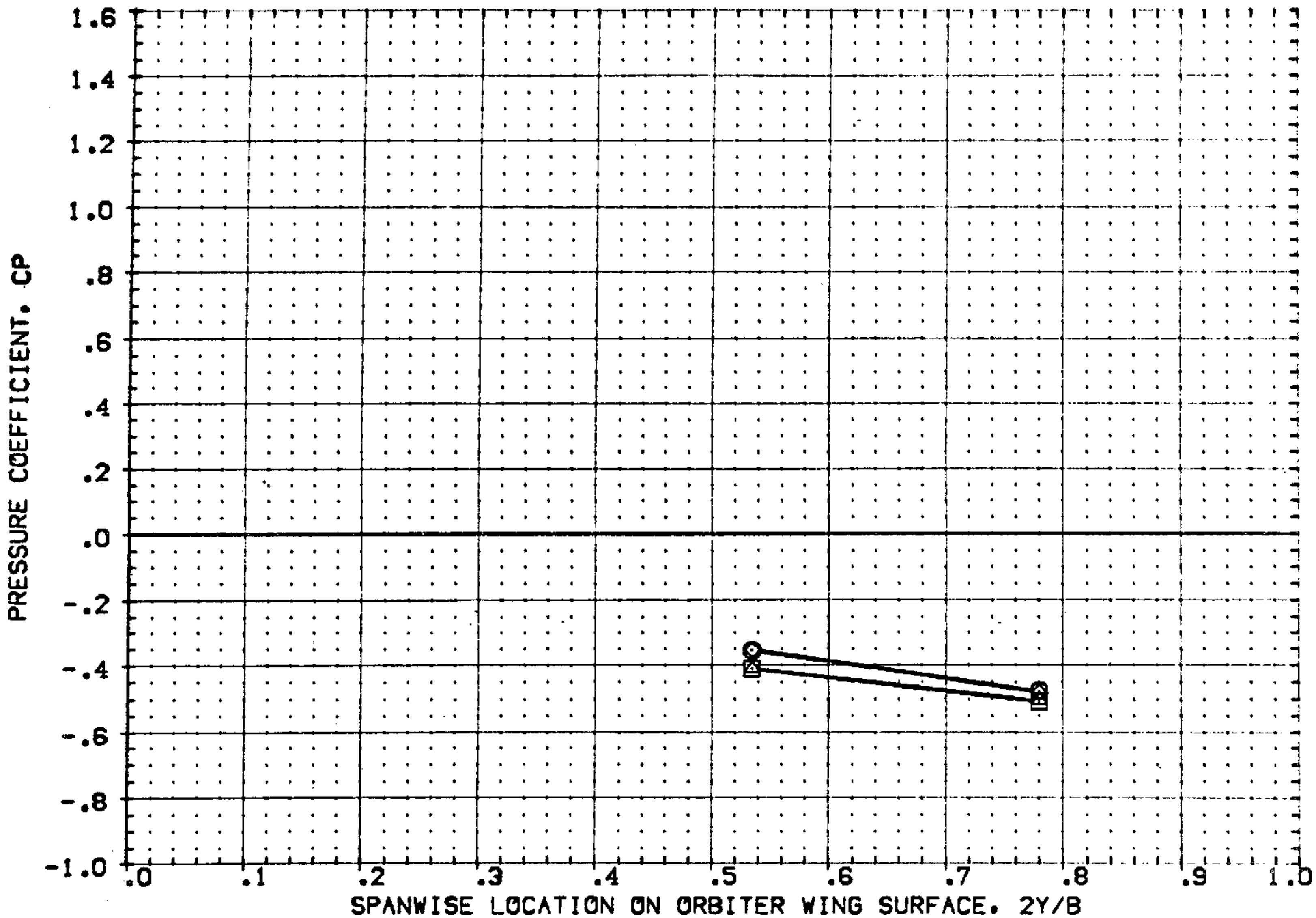


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .400 PAGE 16

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

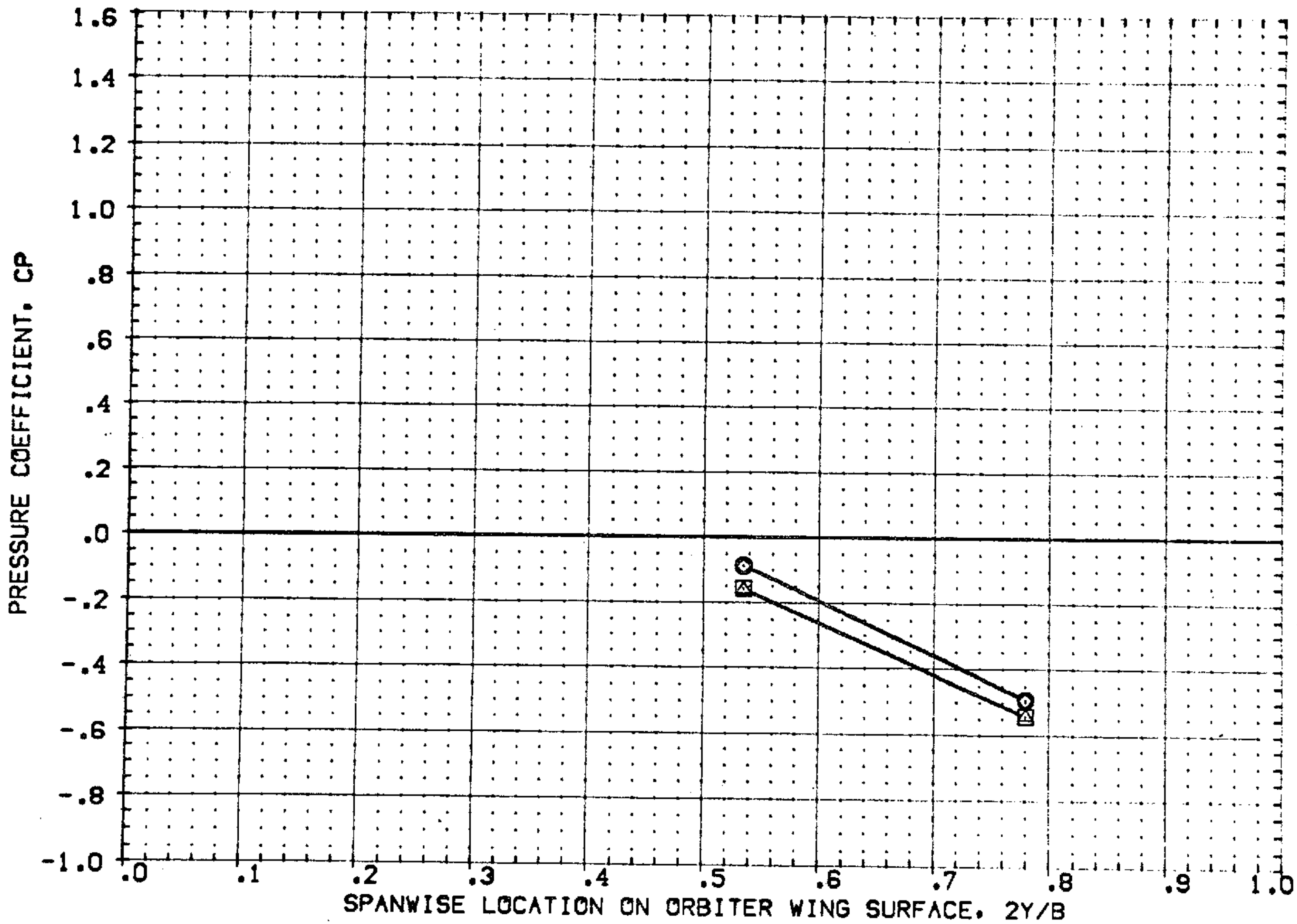


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

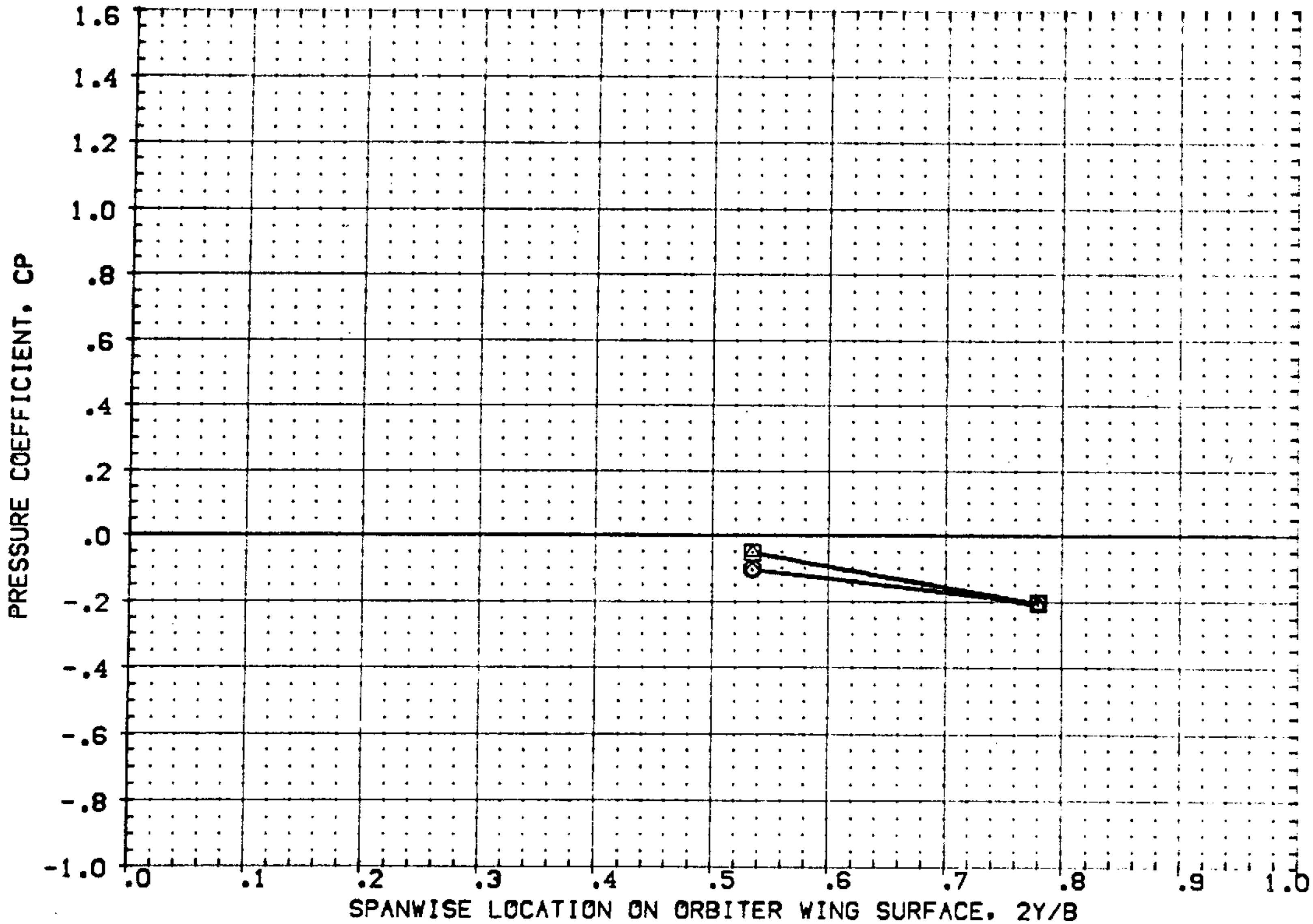


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

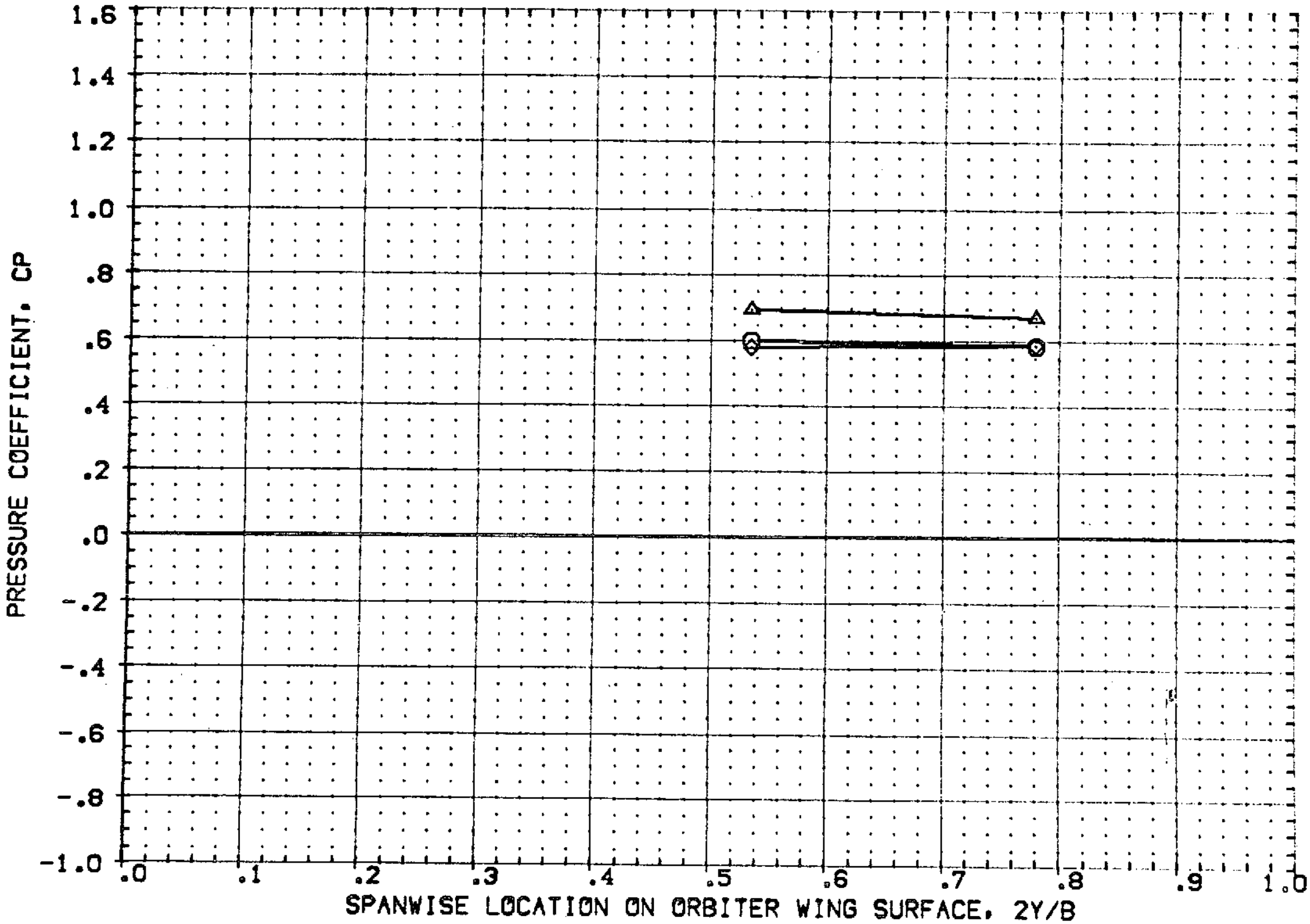


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .000

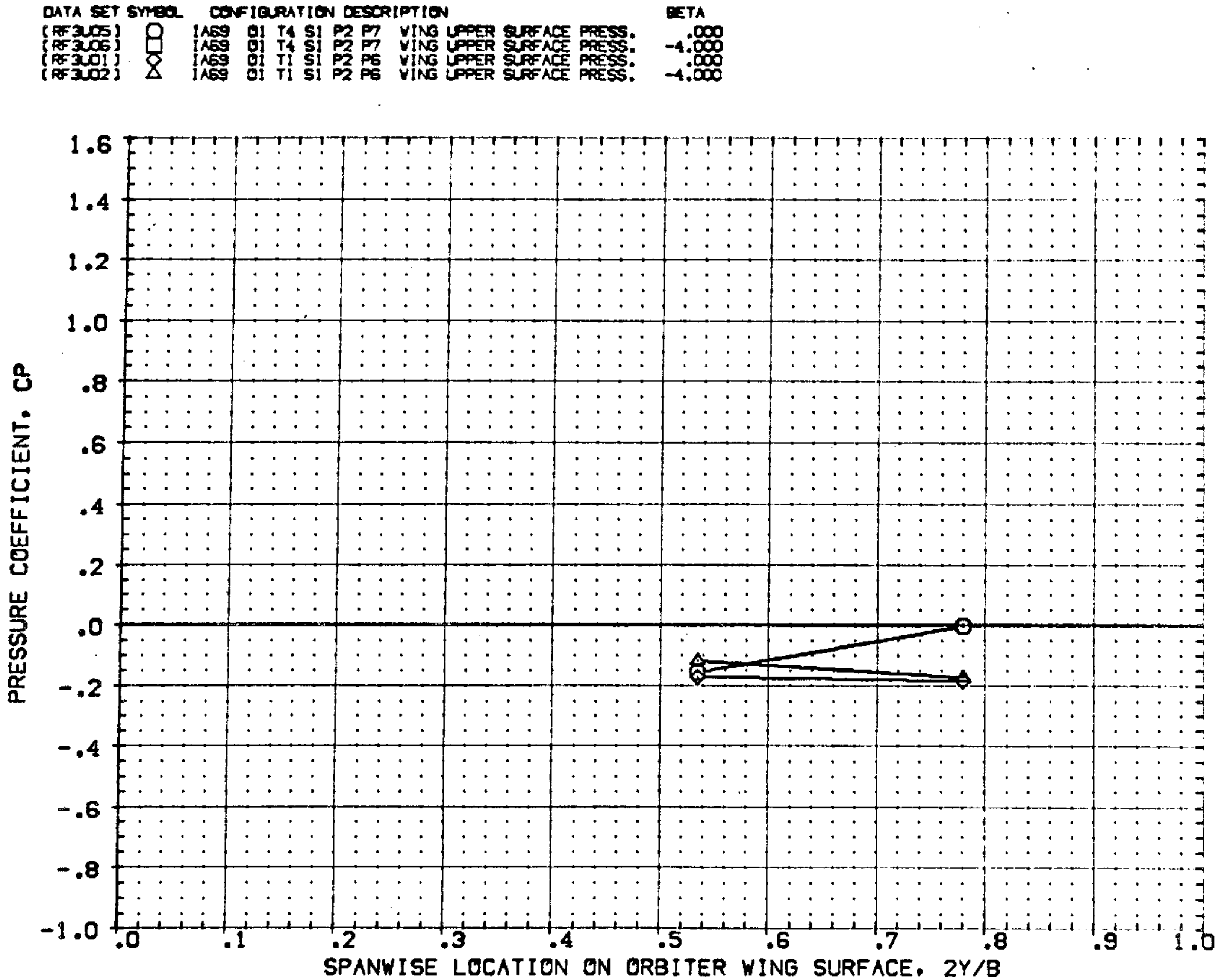


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .050 PAGE 20

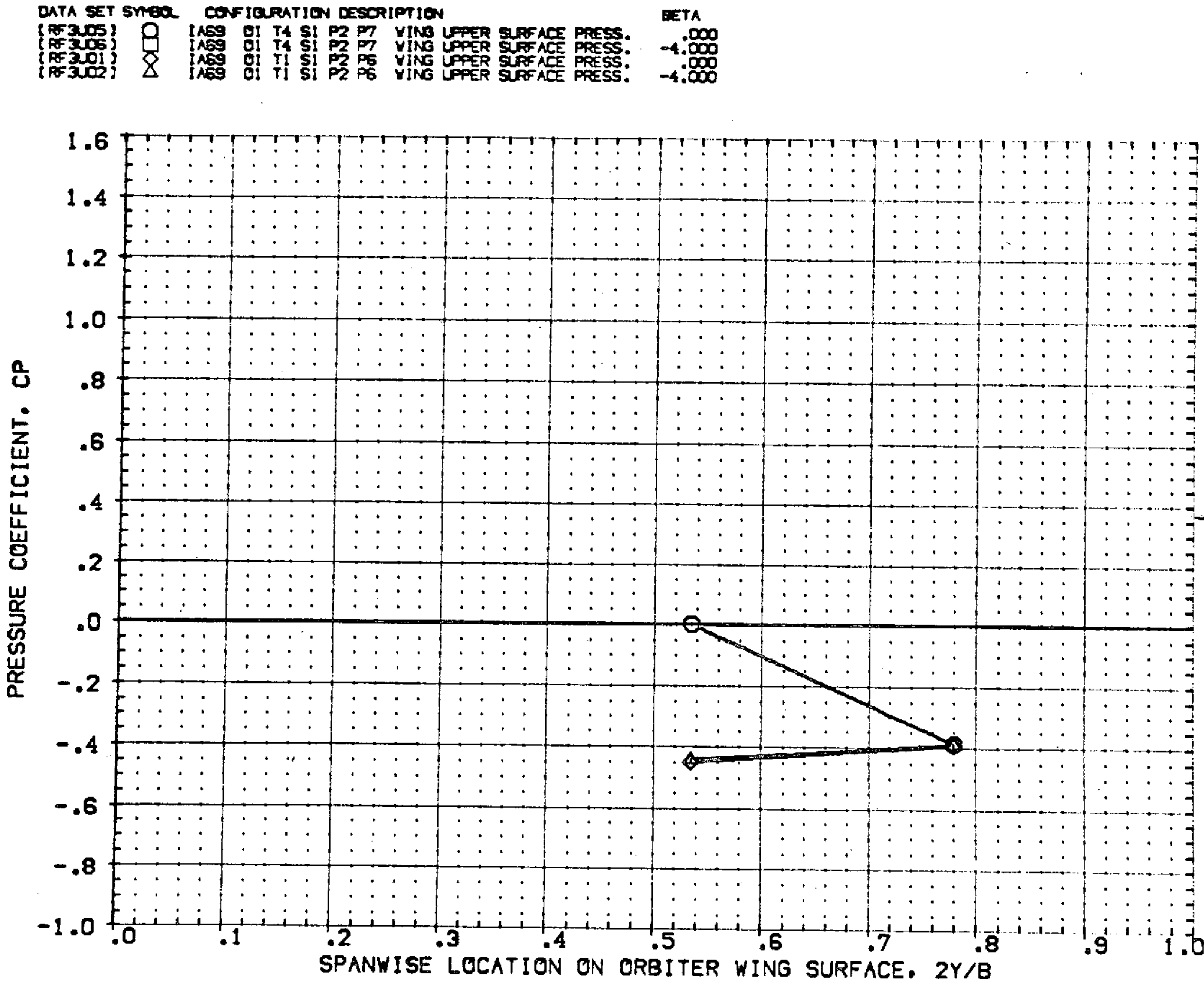


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U06)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U02)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

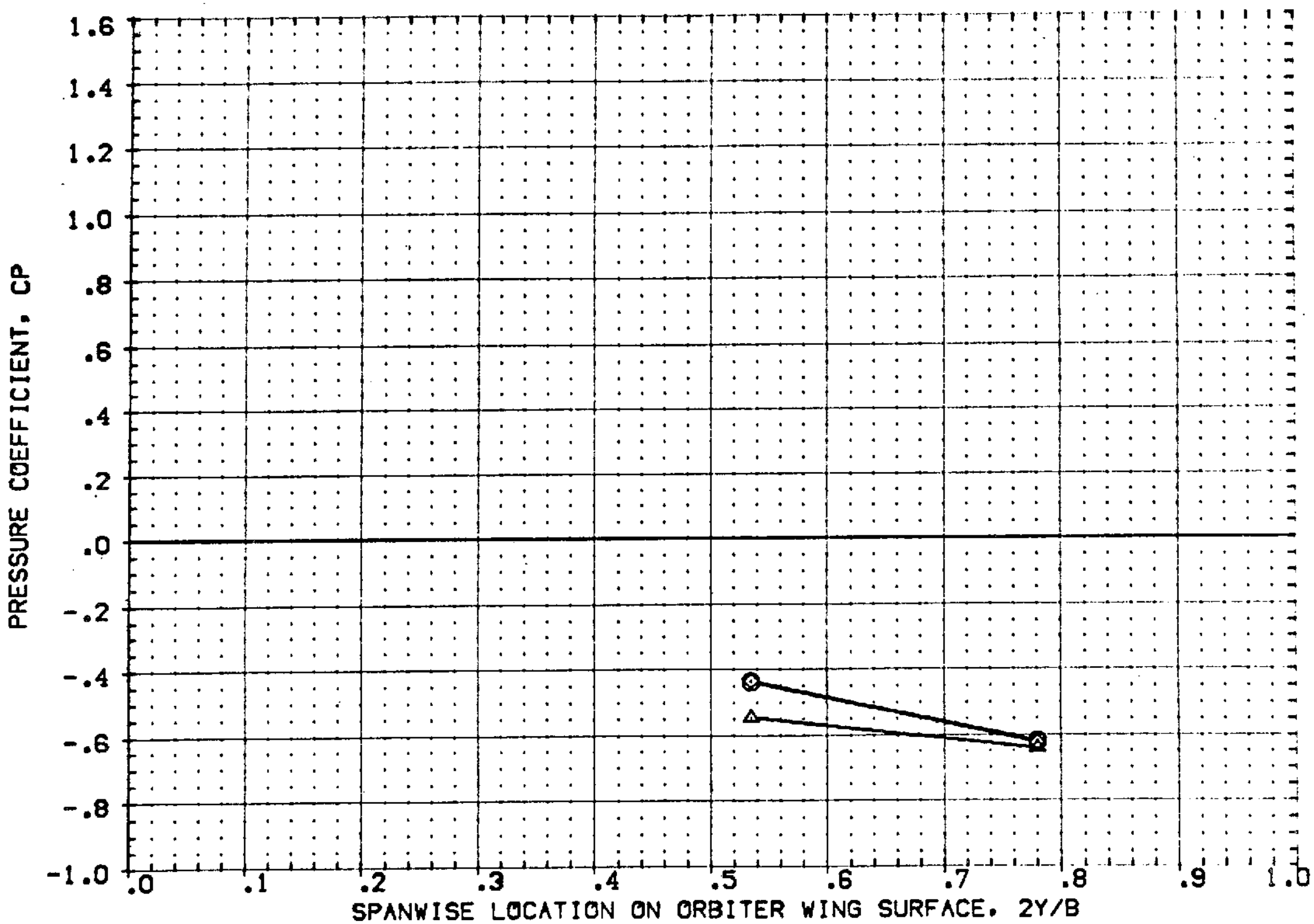


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .400

C-2

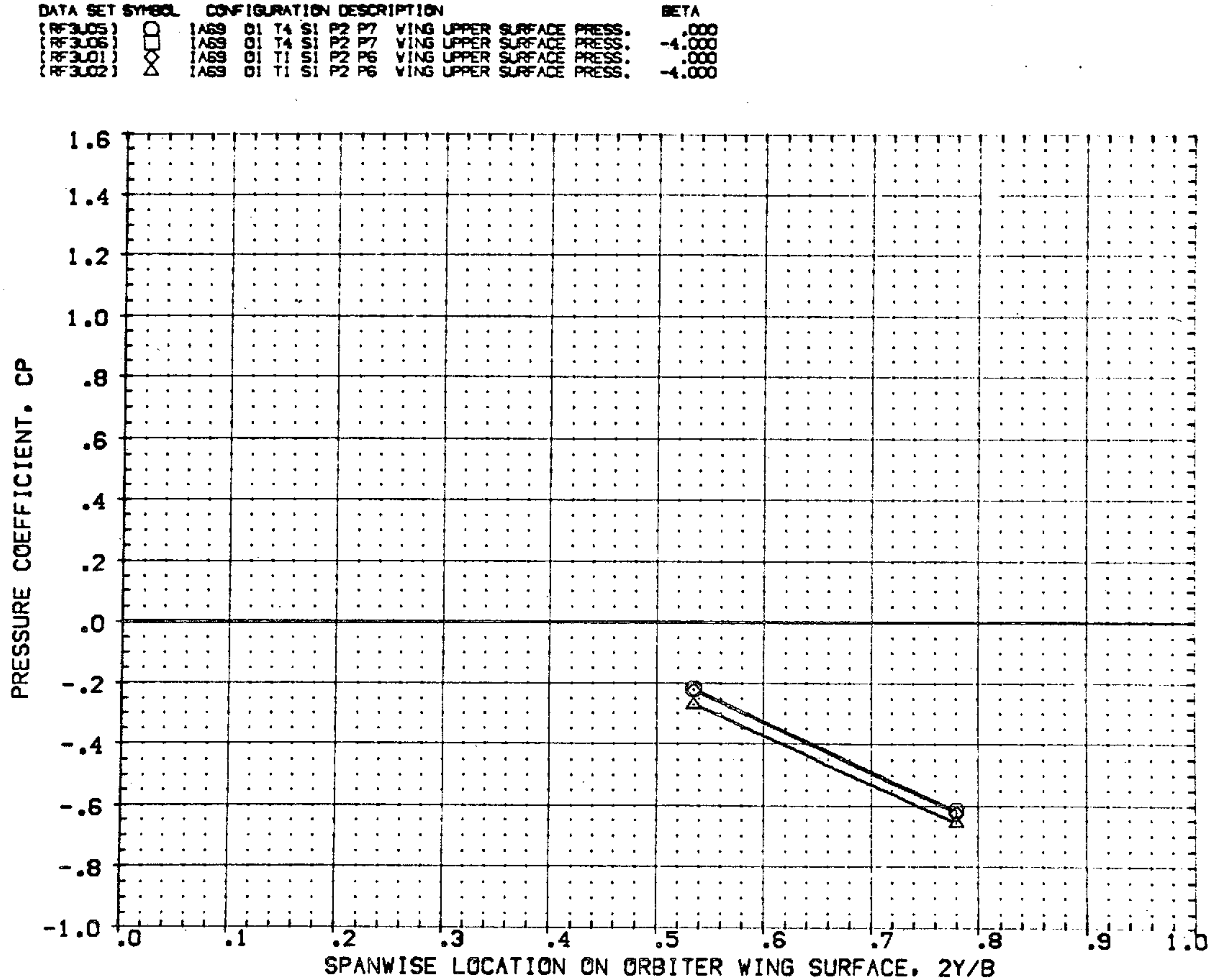


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3U05]	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
[RF3U06]	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	-4.000
[RF3U01]	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
[RF3U02]	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	-4.000

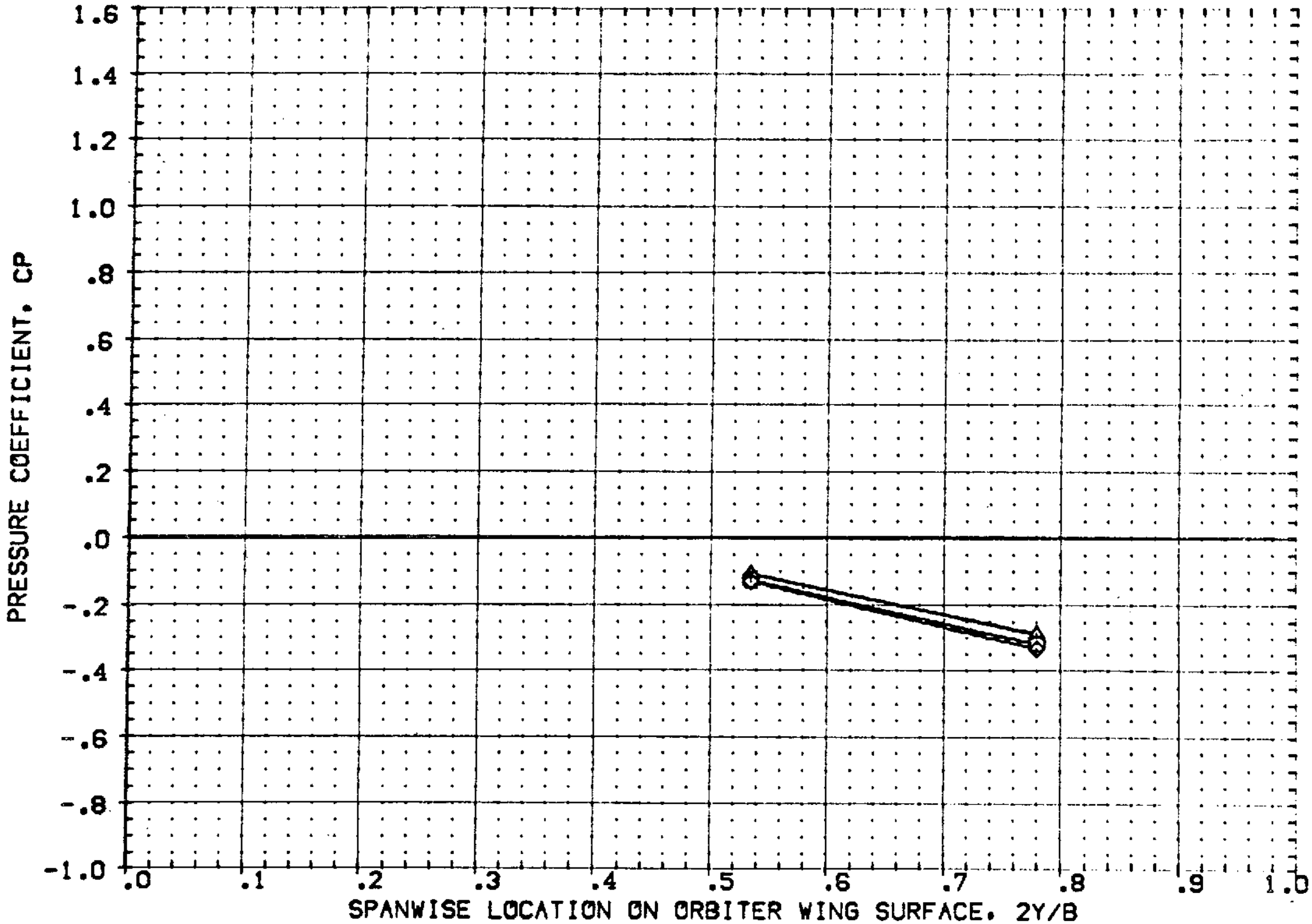


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

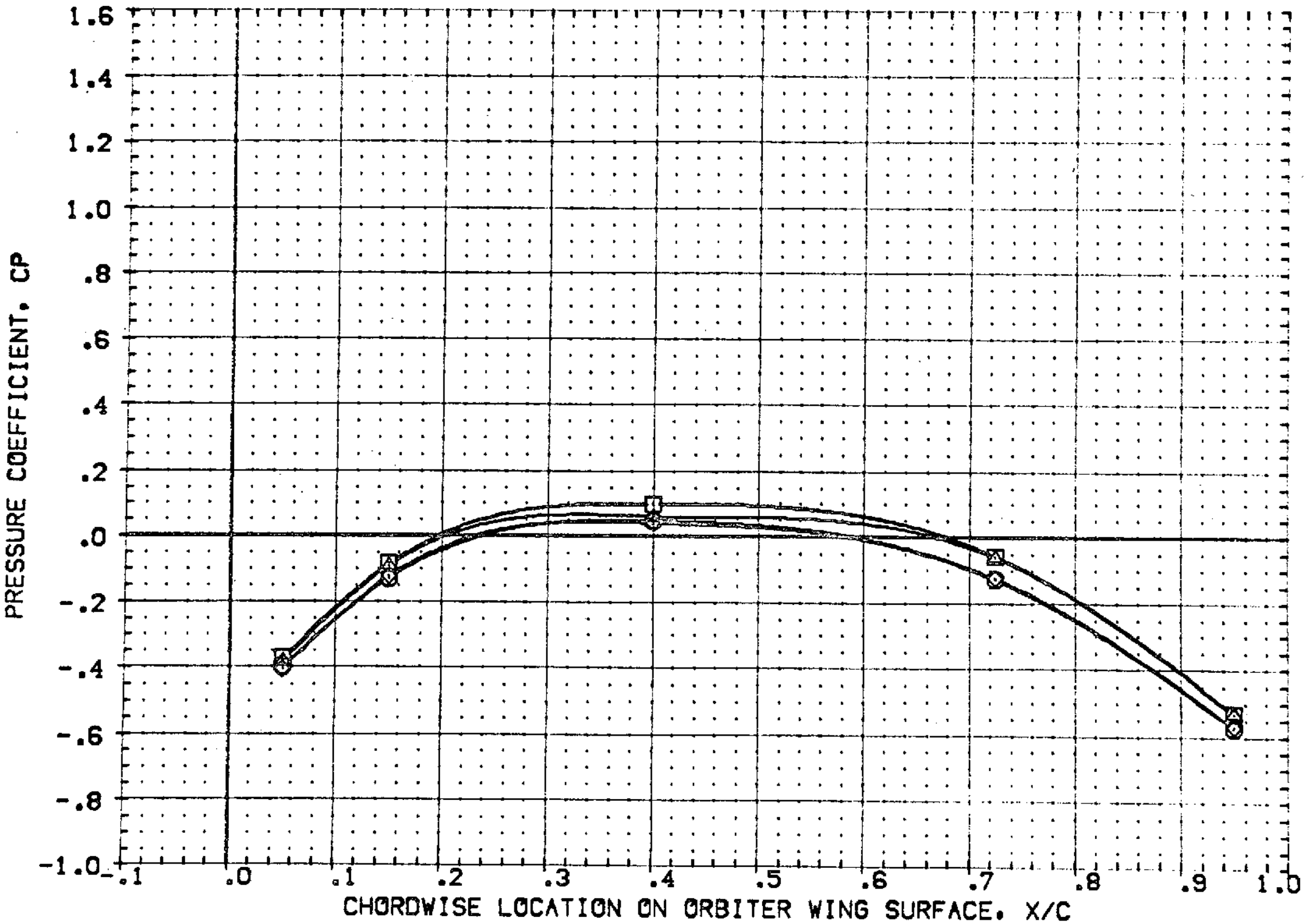


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 2Y/B = .534

DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA
(RF3L05) ○ IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS. .000
(RF3L06) □ IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS. -4.000
(RF3L01) ◇ IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS. .000
(RF3L02) △ IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS. -4.000

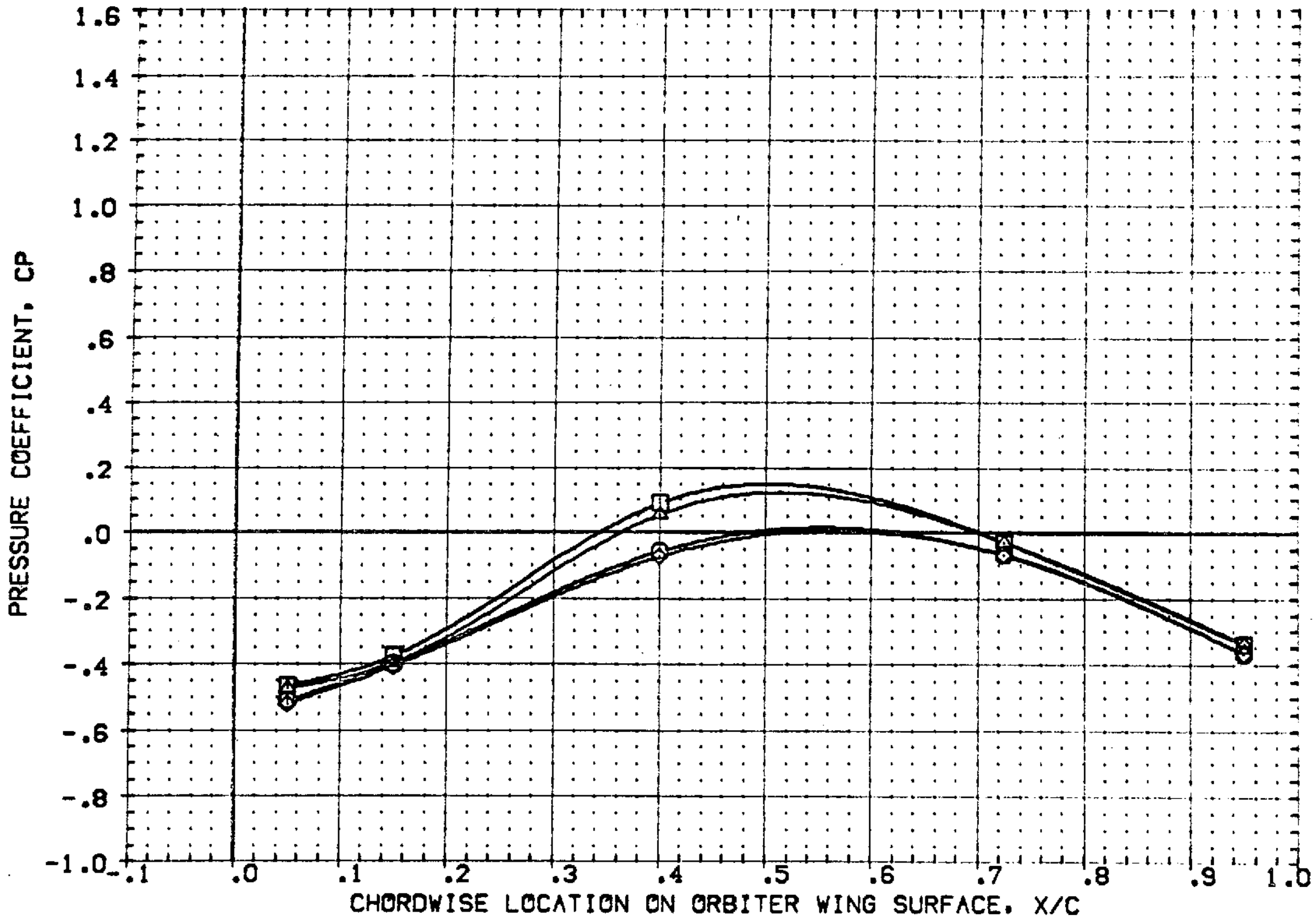


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 2Y/B = .780

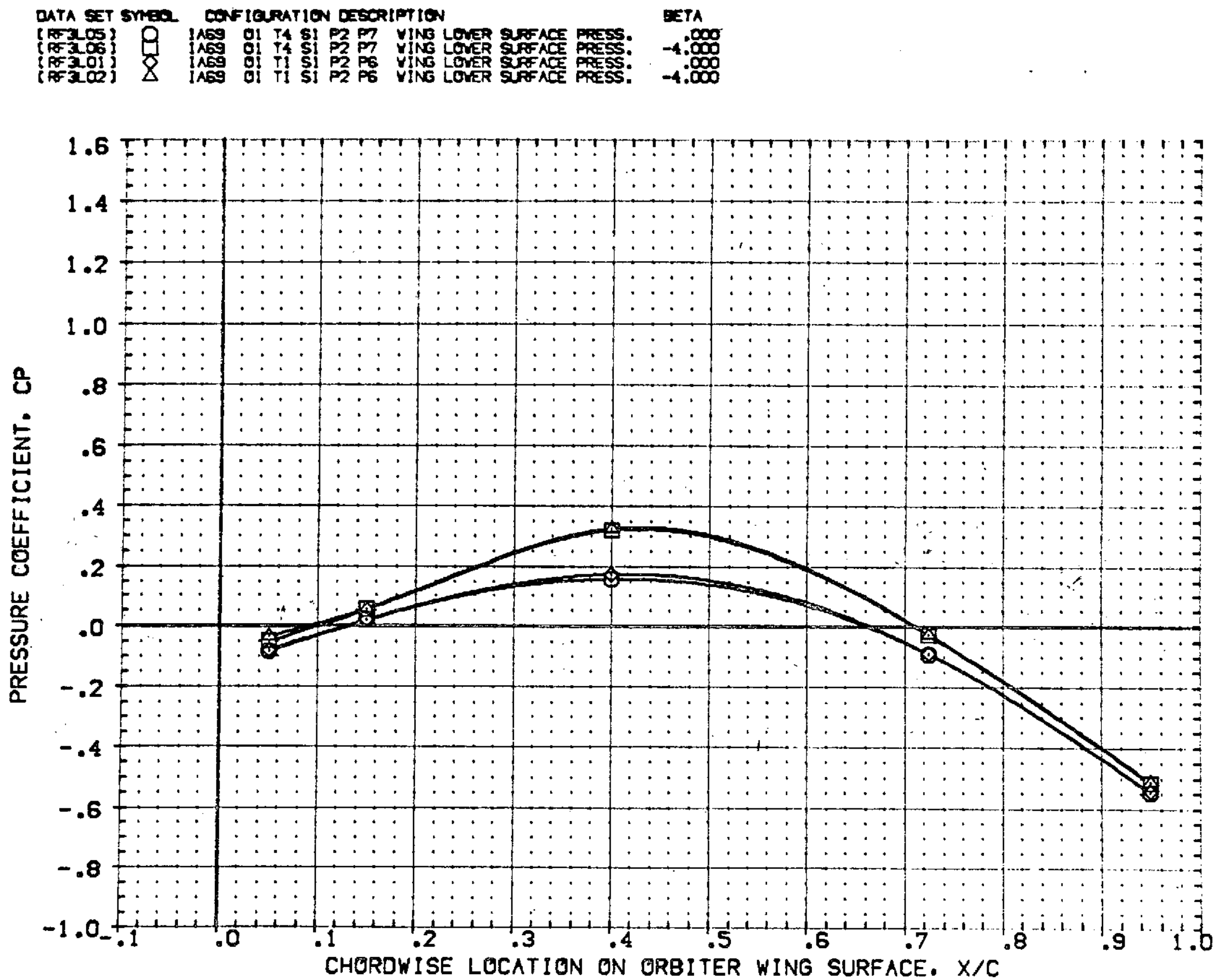


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

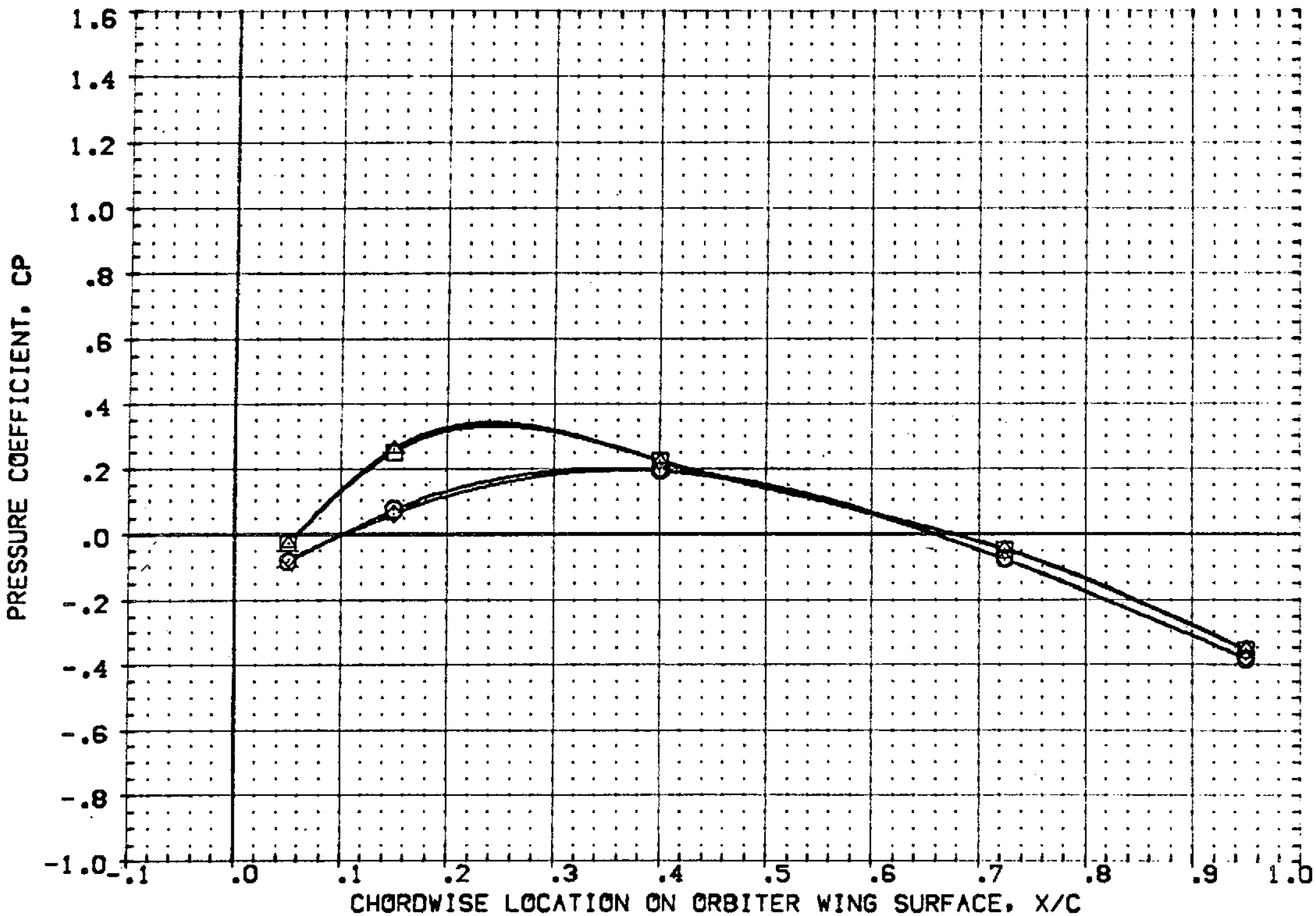


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

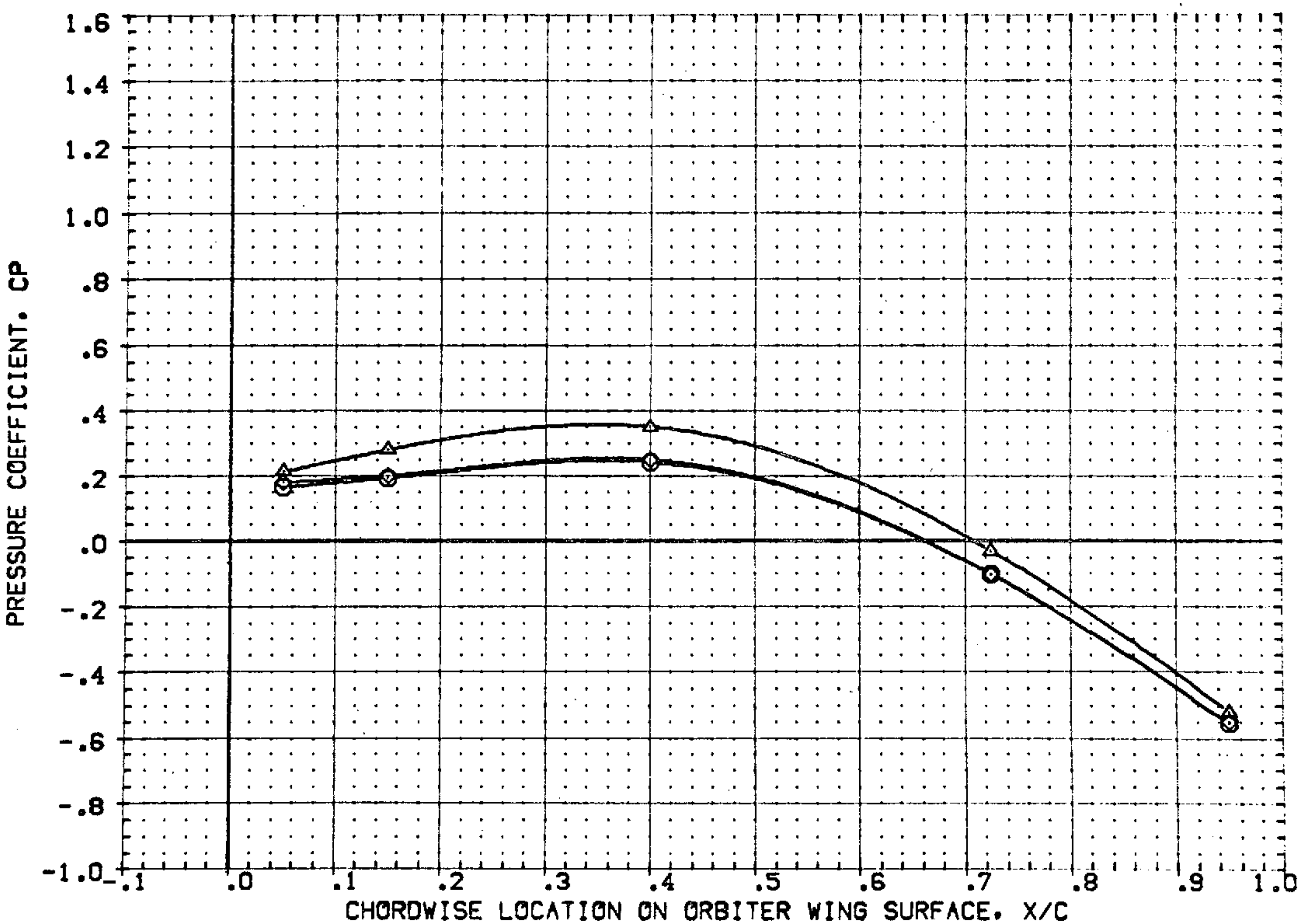


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

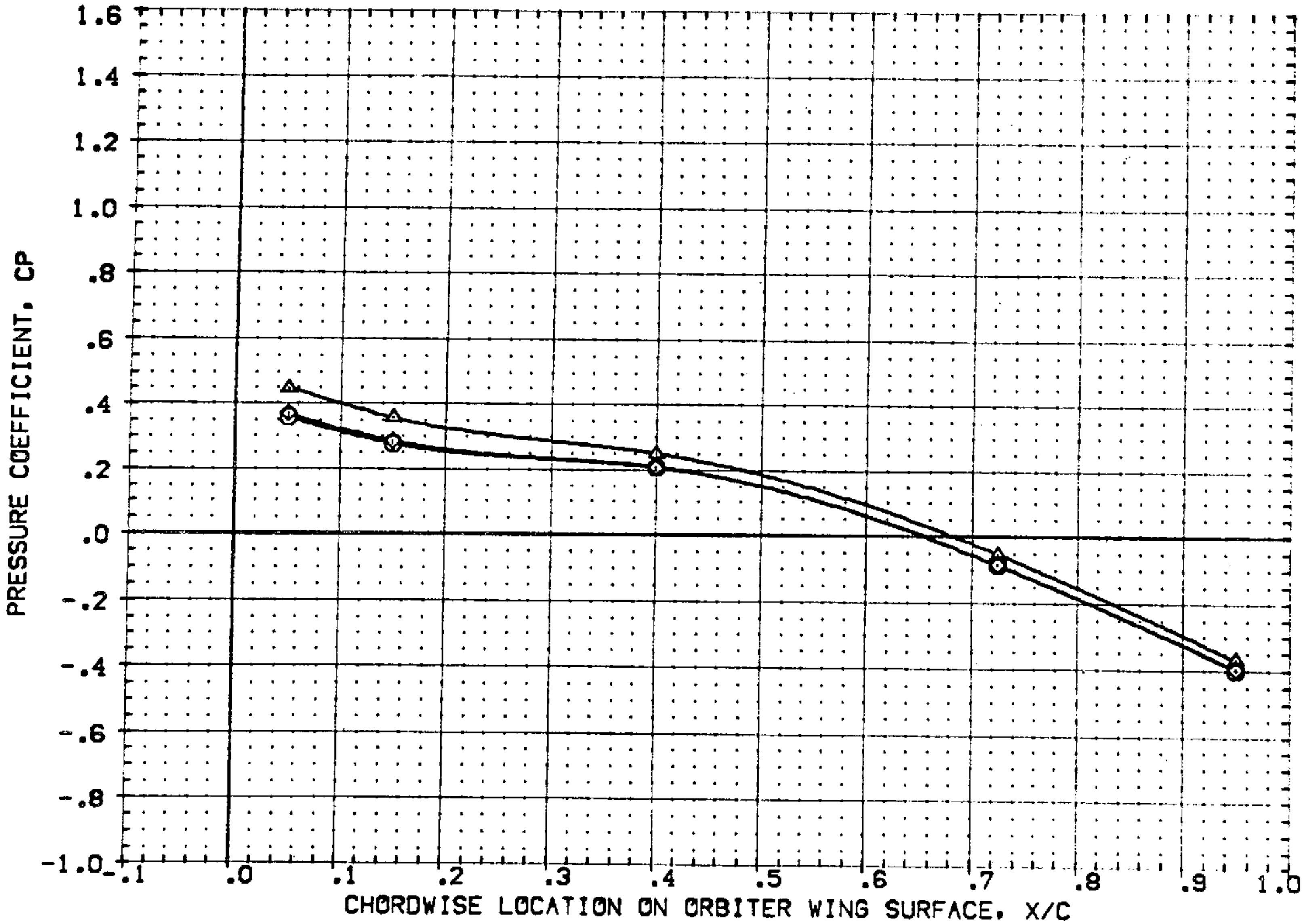


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 2Y/B = .780

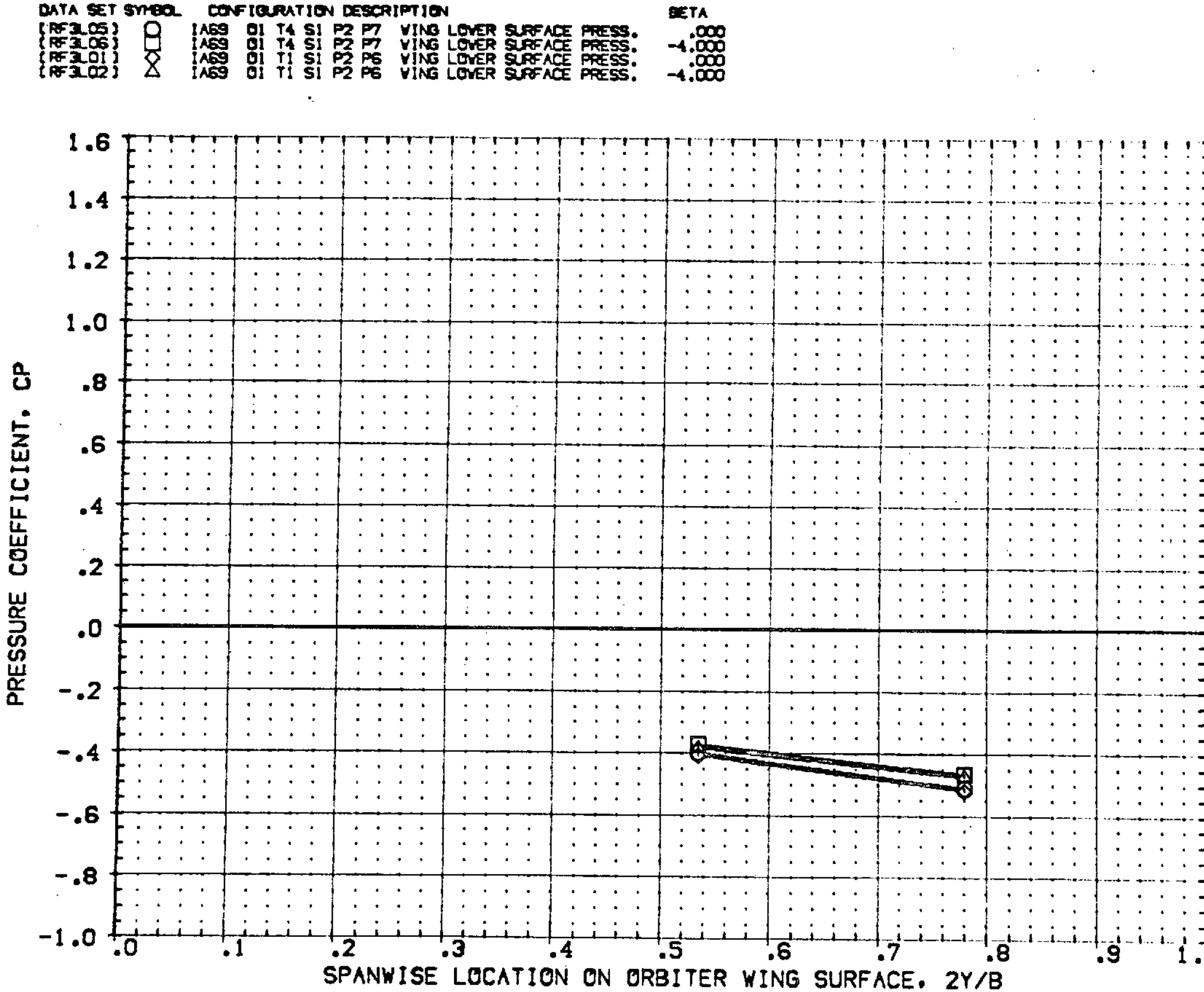


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

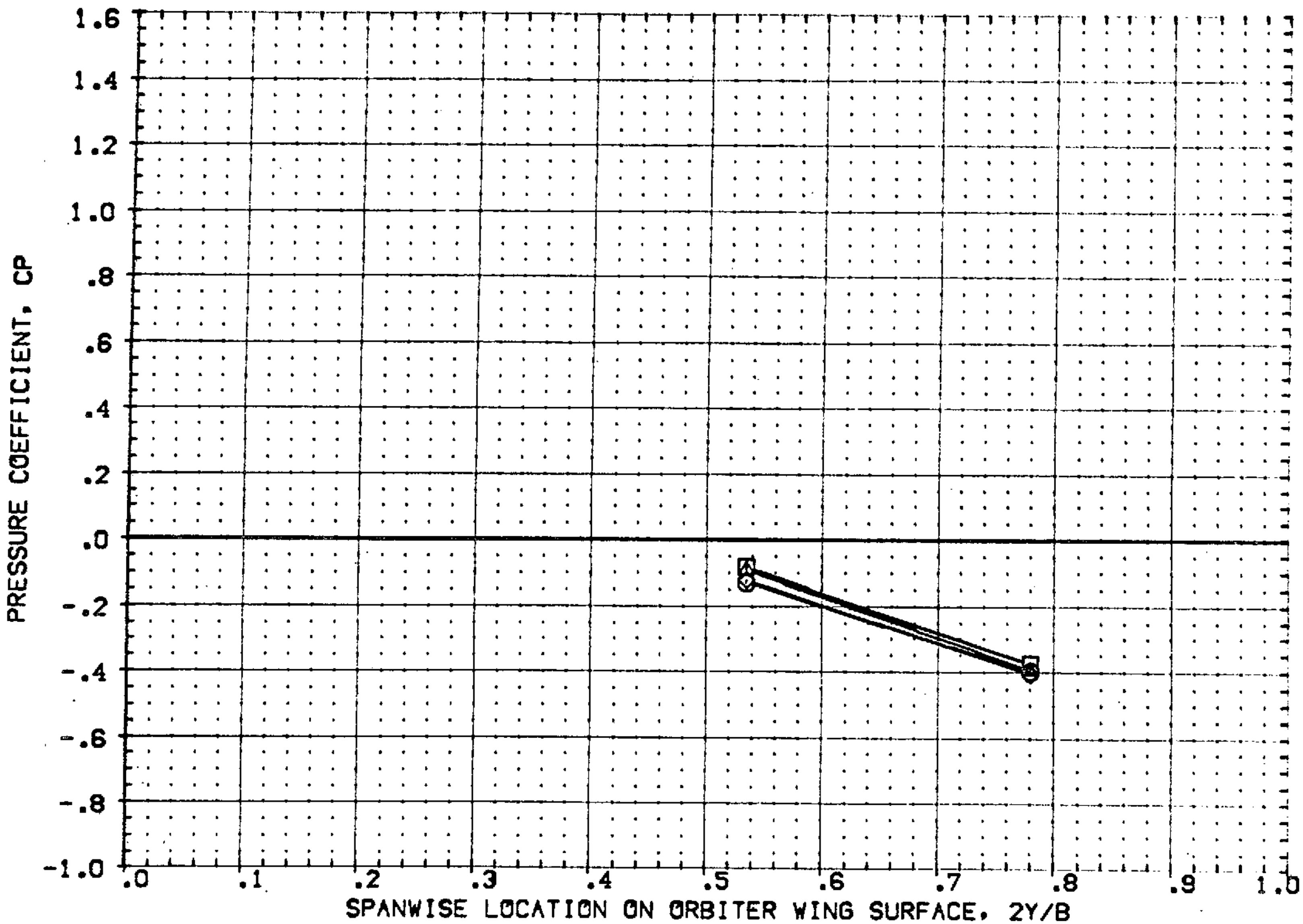


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

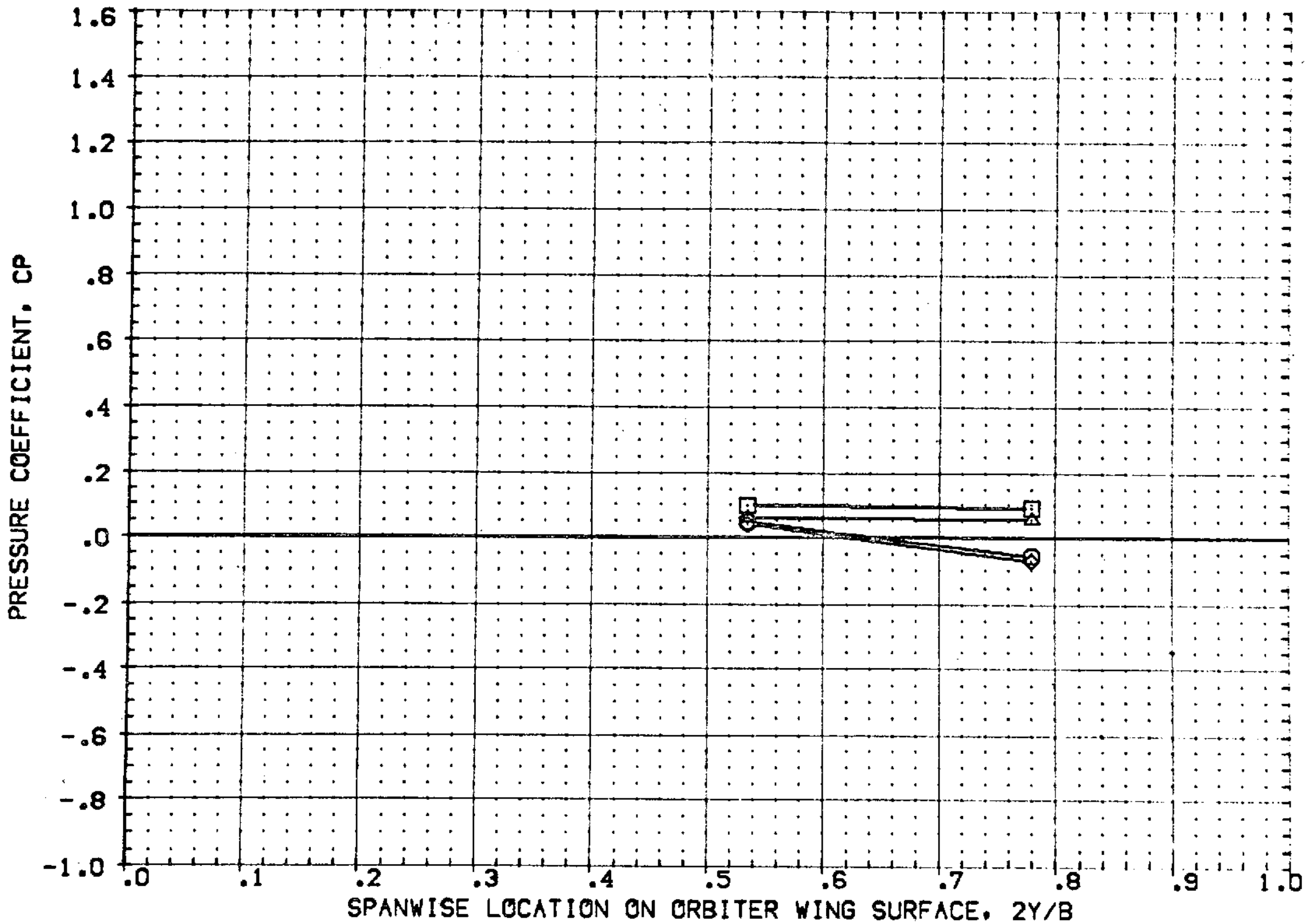


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

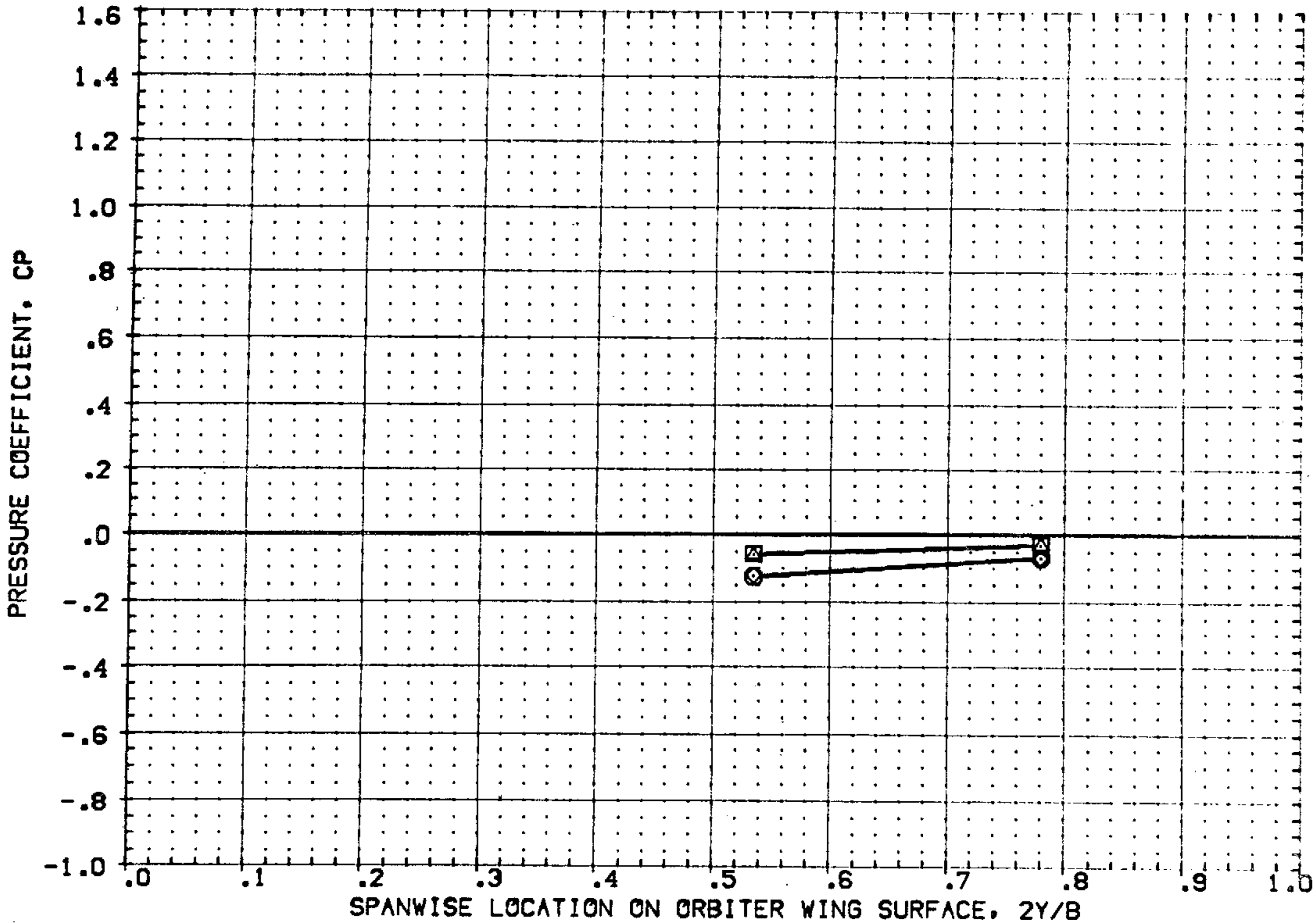


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

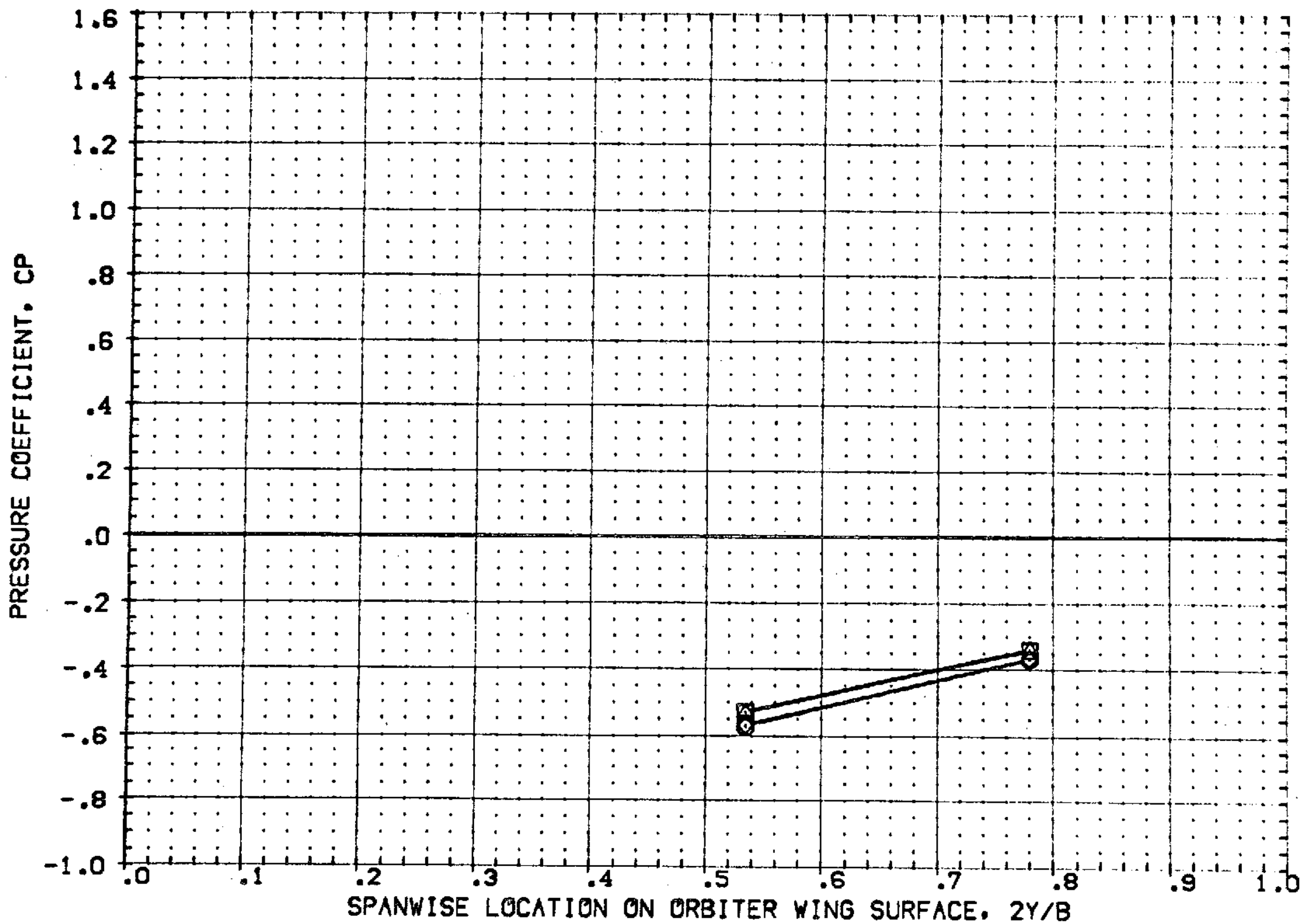


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3L05]	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
[RF3L06]	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
[RF3L01]	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
[RF3L02]	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

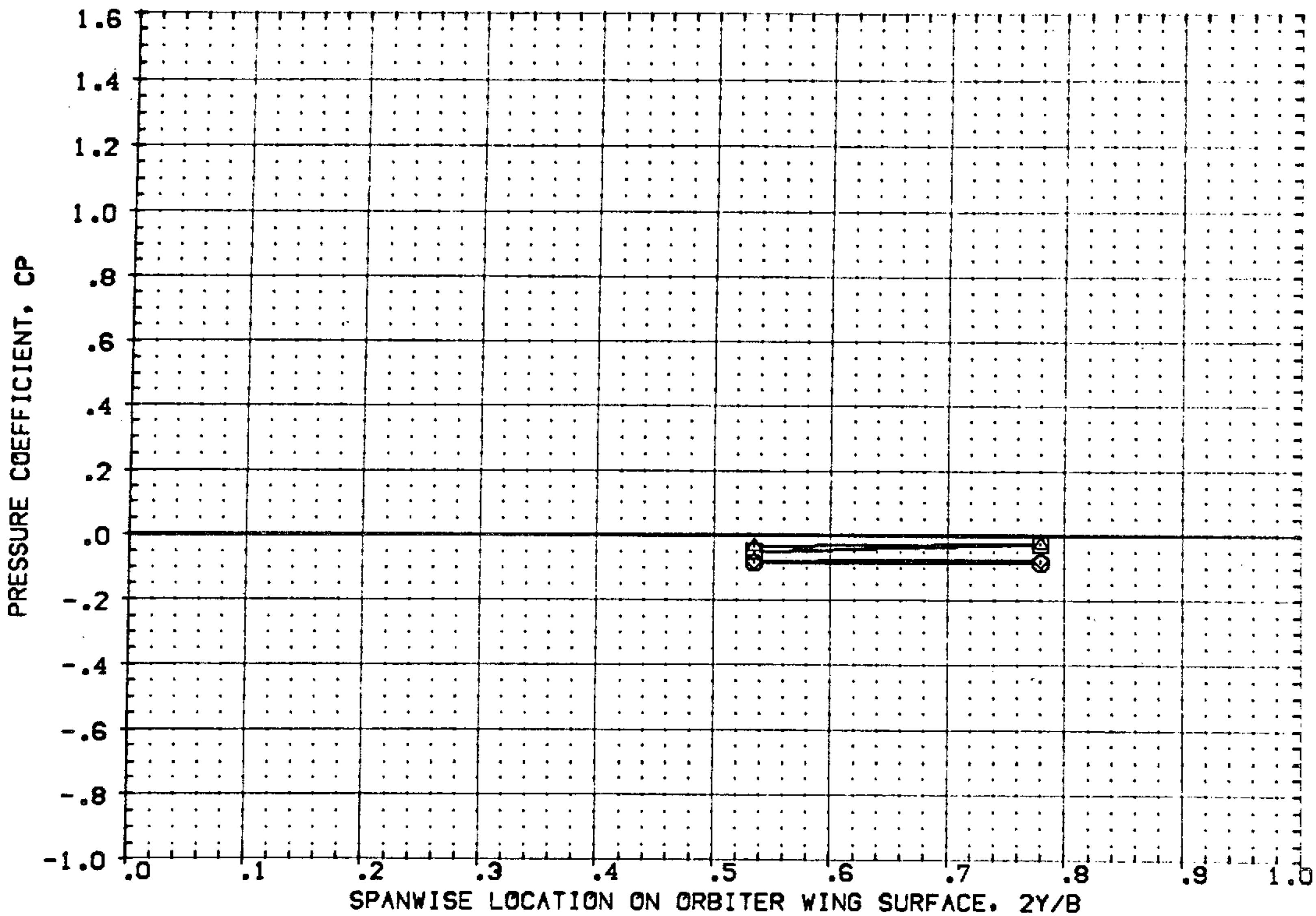


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◊	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

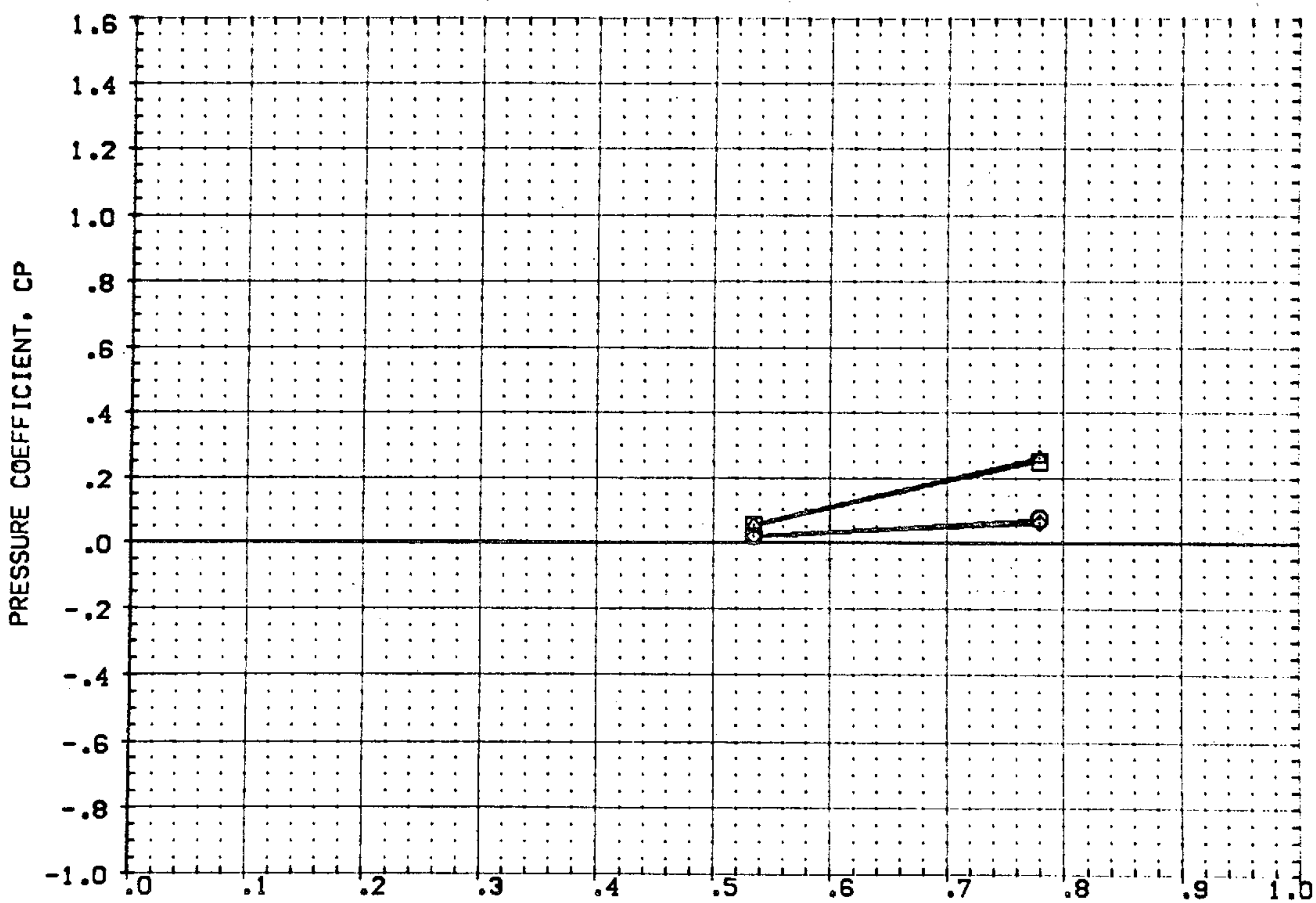


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

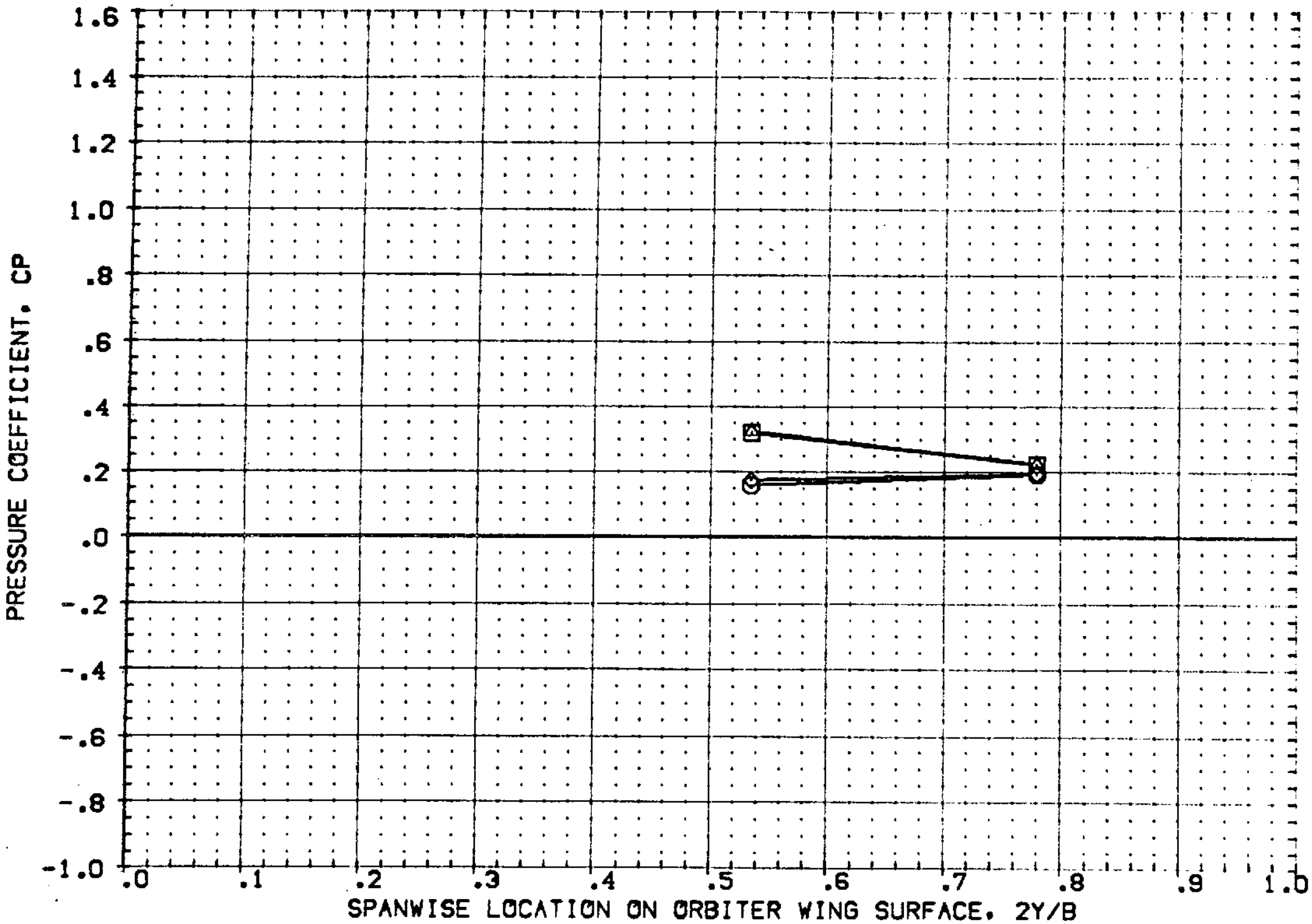


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

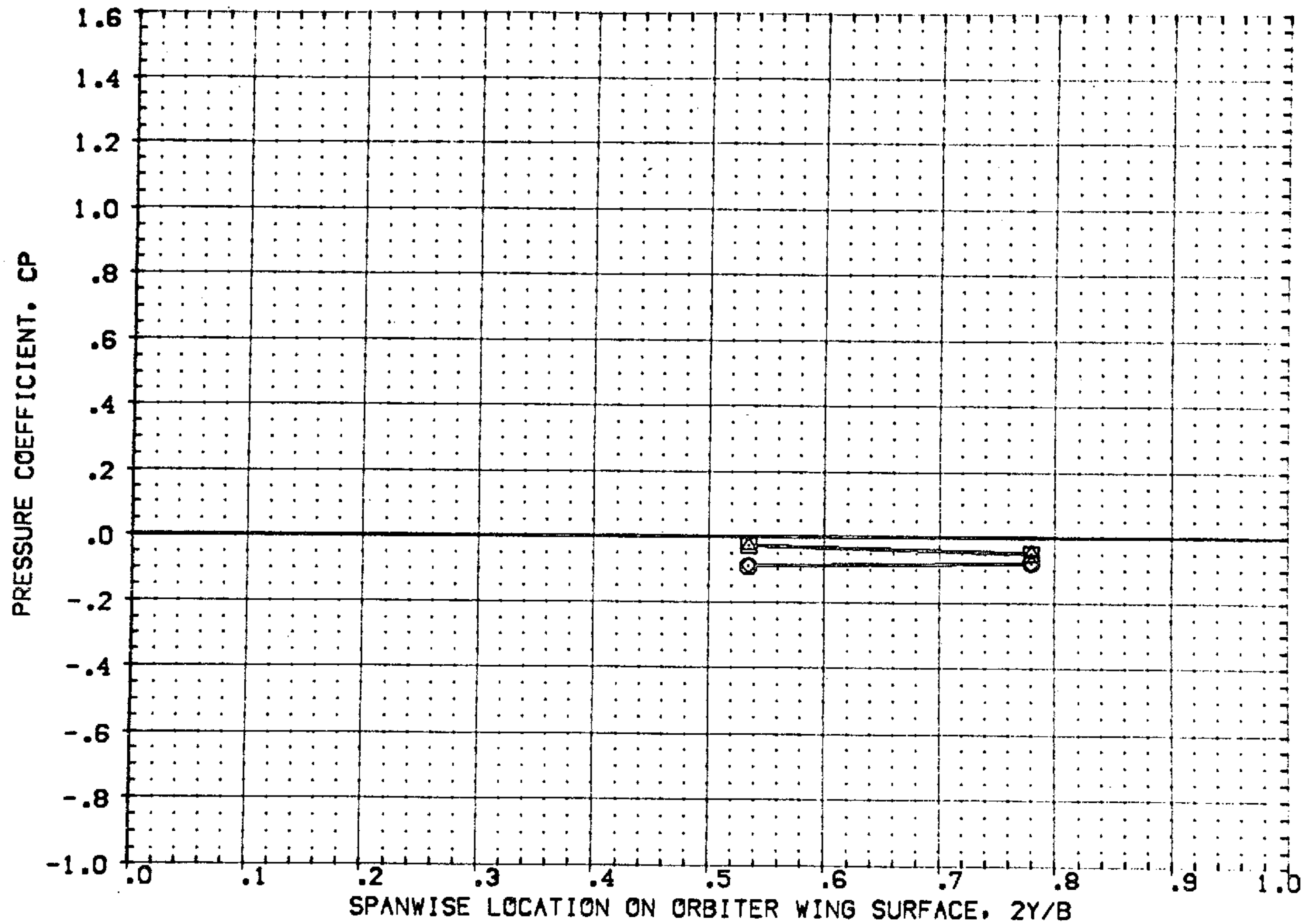


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

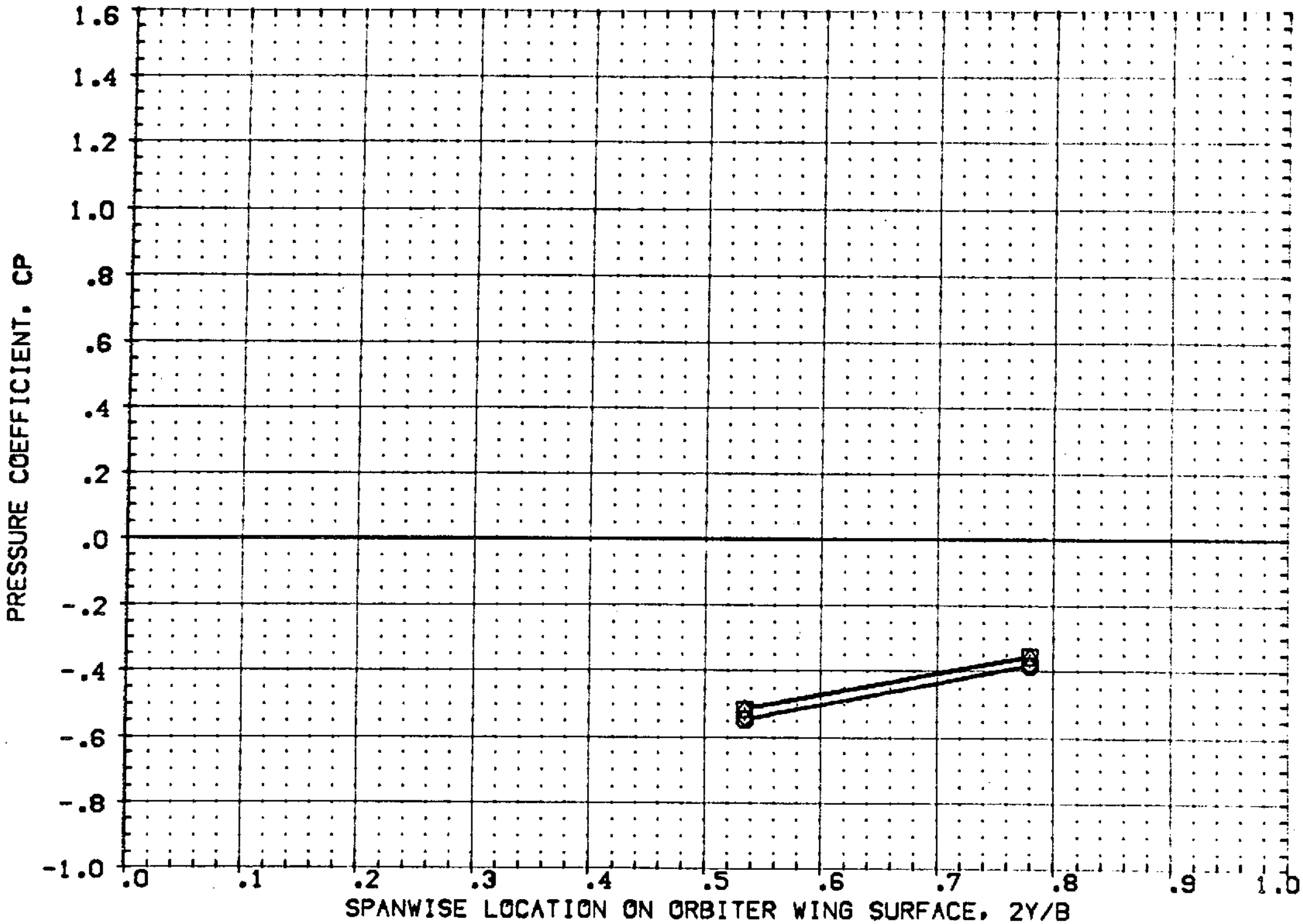


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

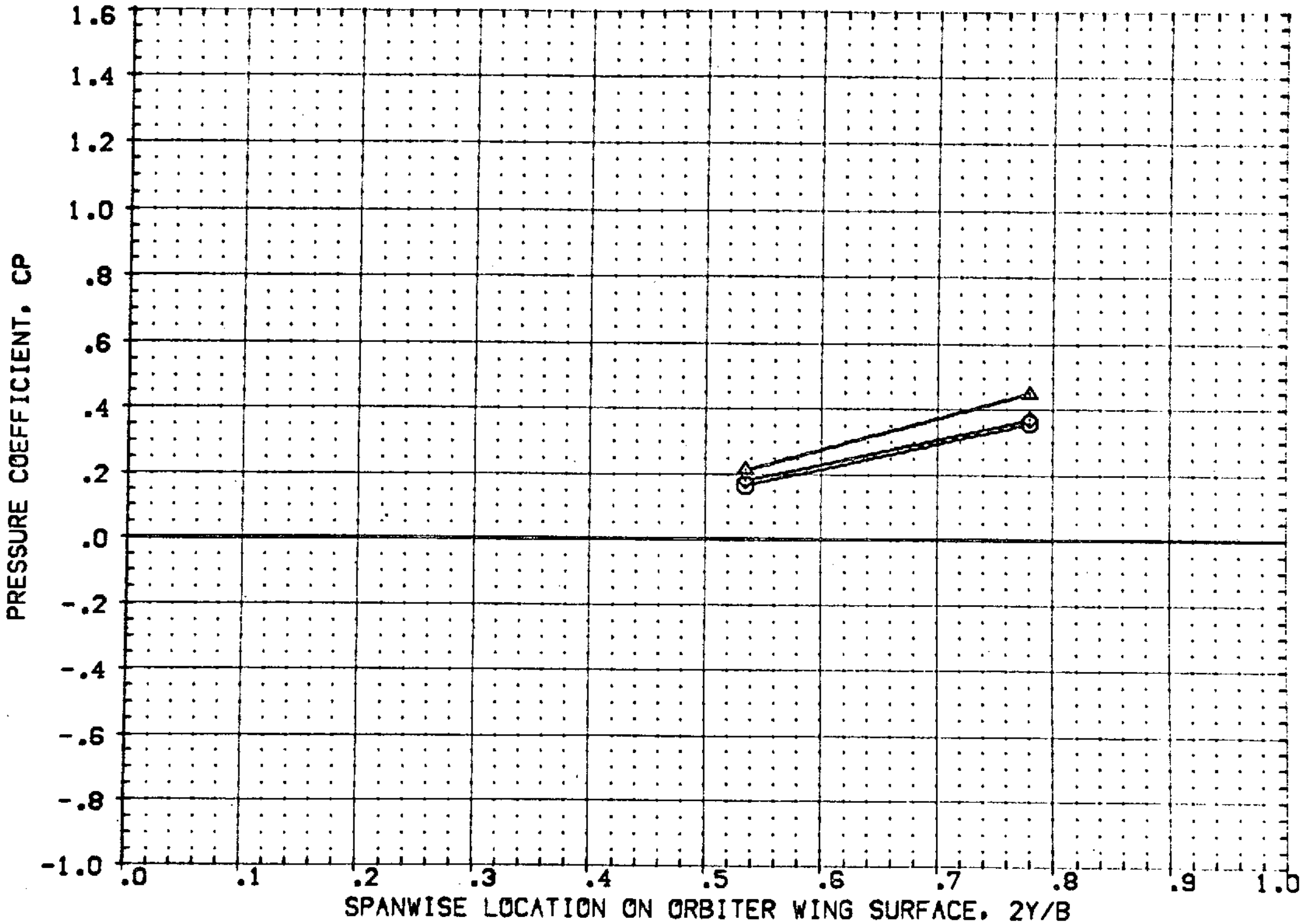


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

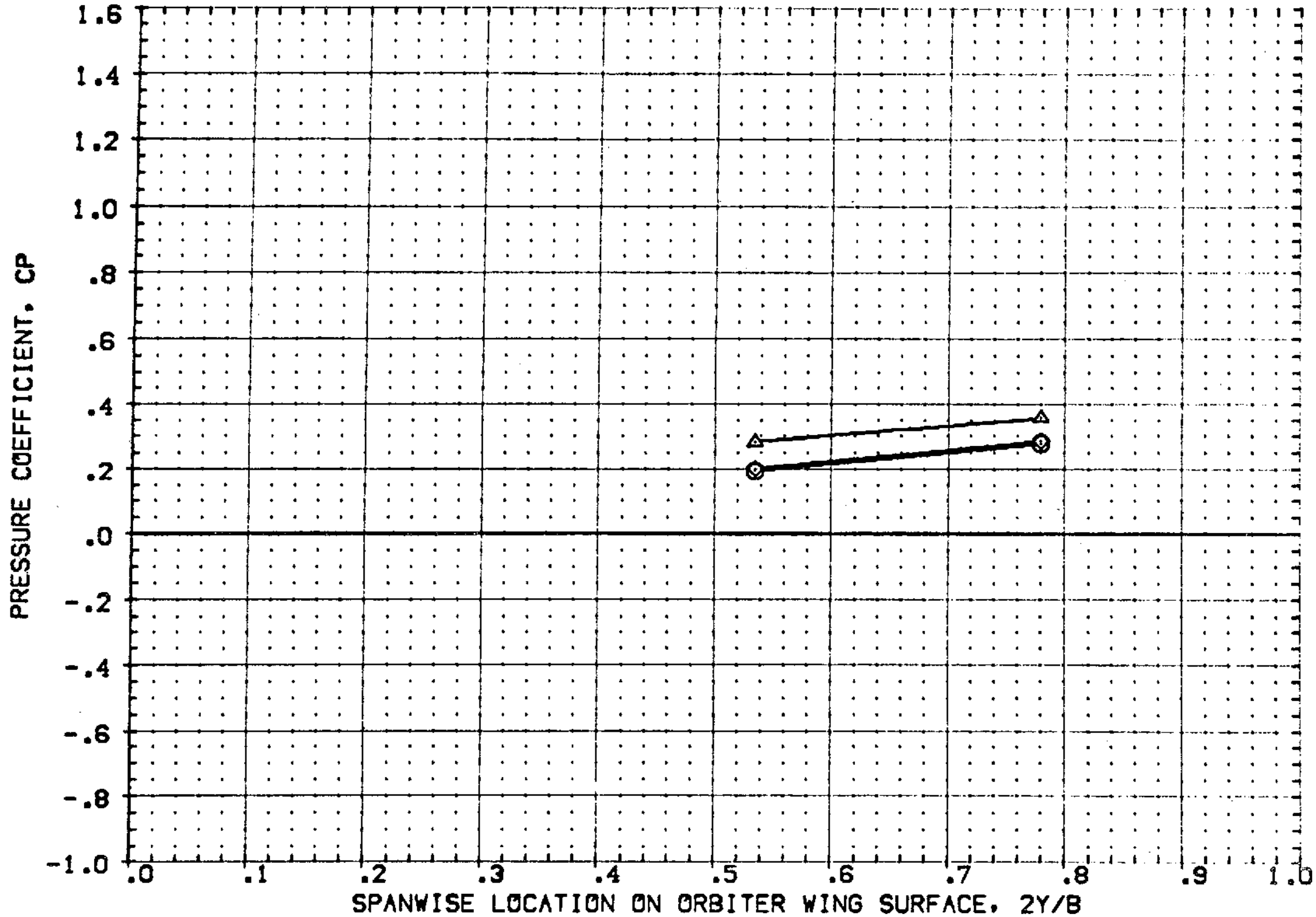


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3L05]	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
[RF3L06]	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
[RF3L01]	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
[RF3L02]	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

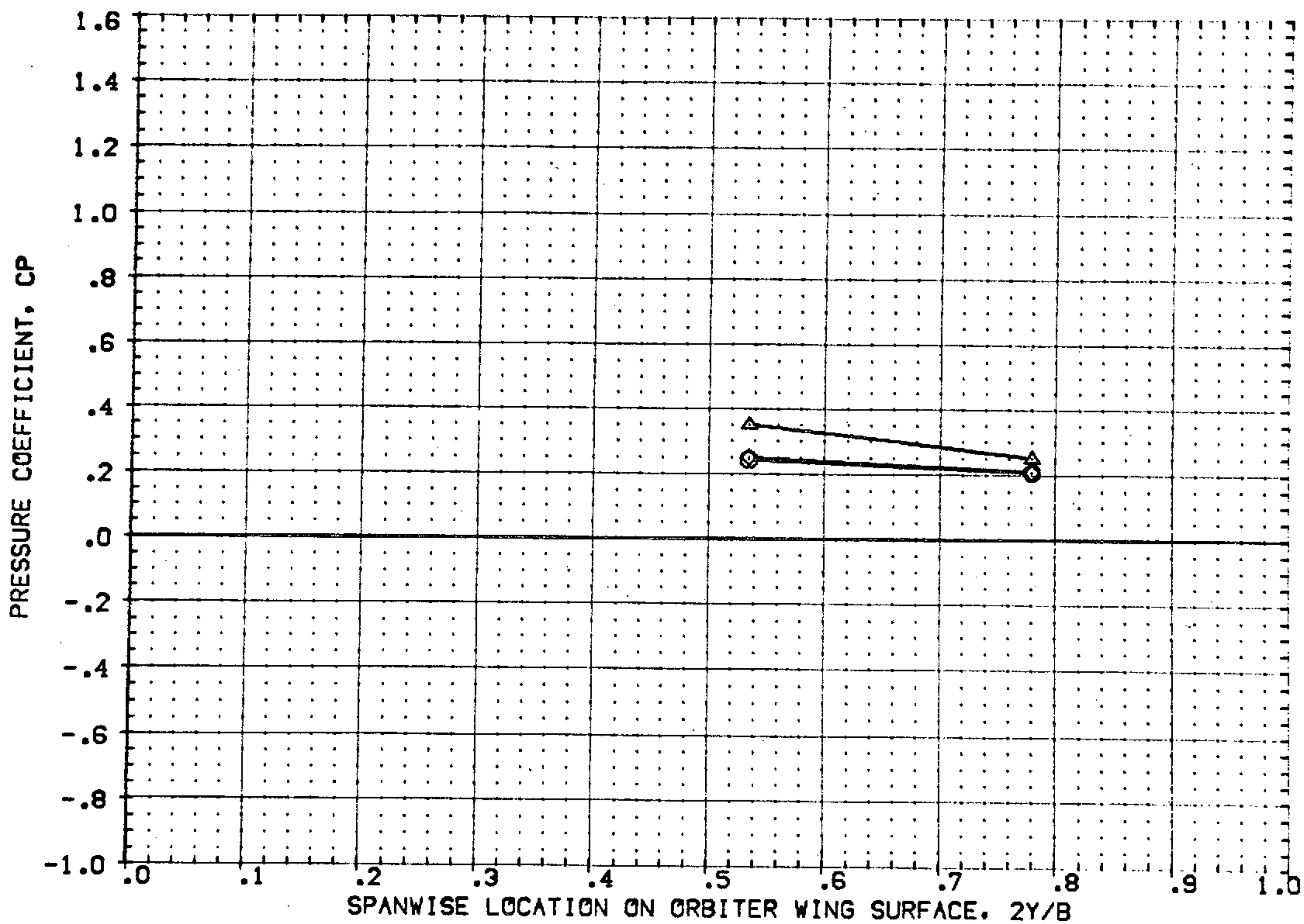


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◊	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

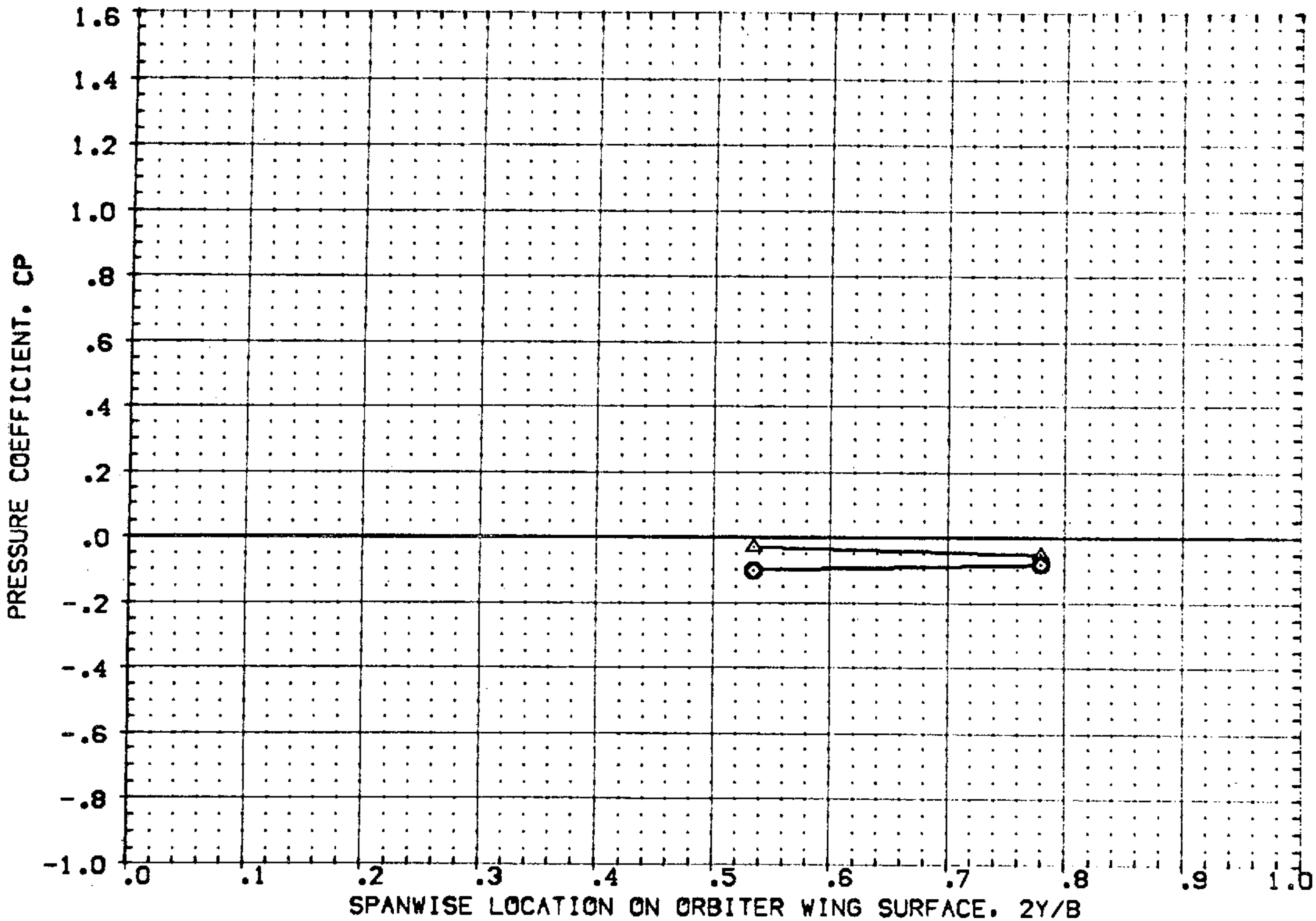


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L06)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	-4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L02)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	-4.000

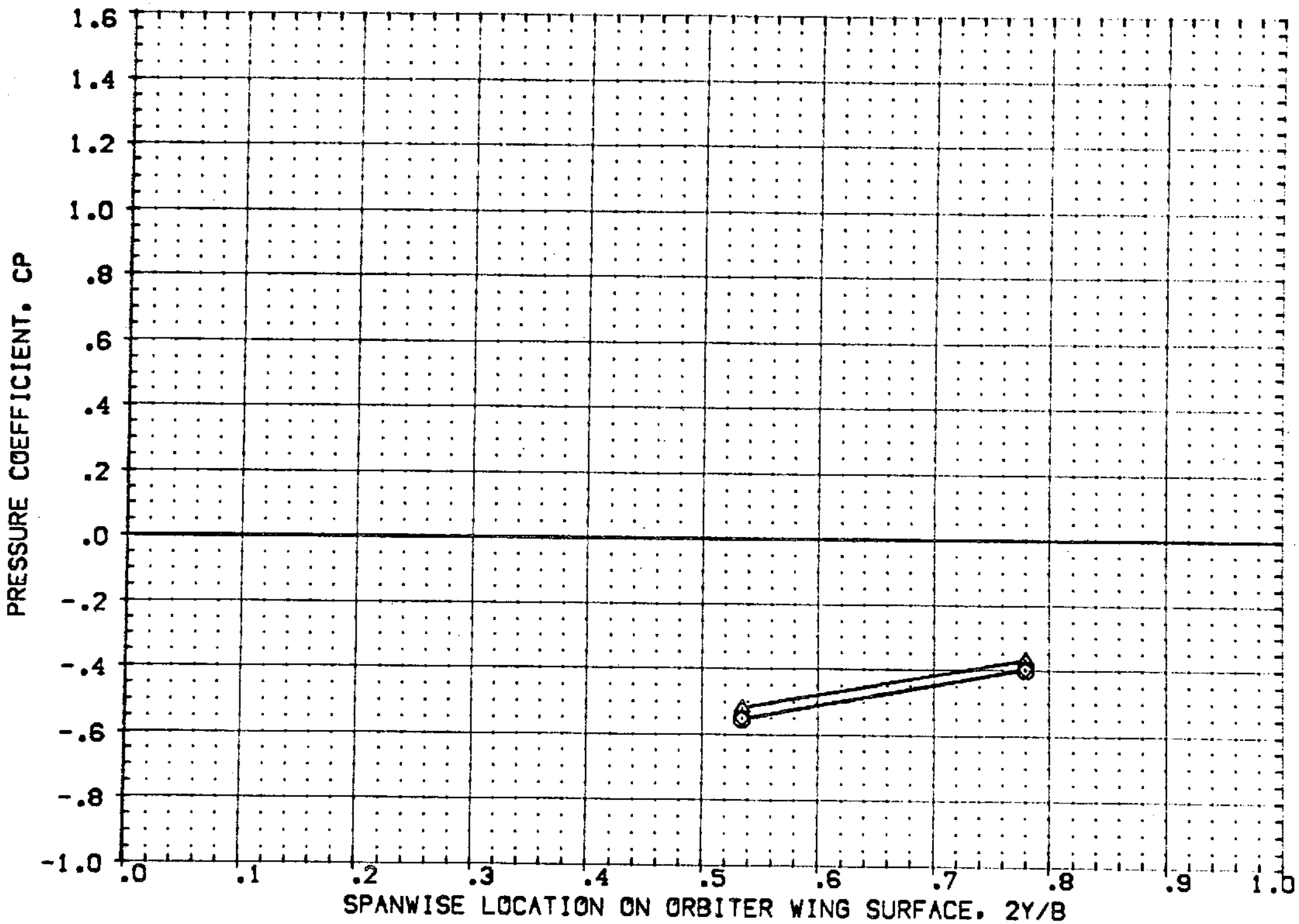


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3F05]	○	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
[RF3F06]	□	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
[RF3F01]	◇	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
[RF3F02]	△	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

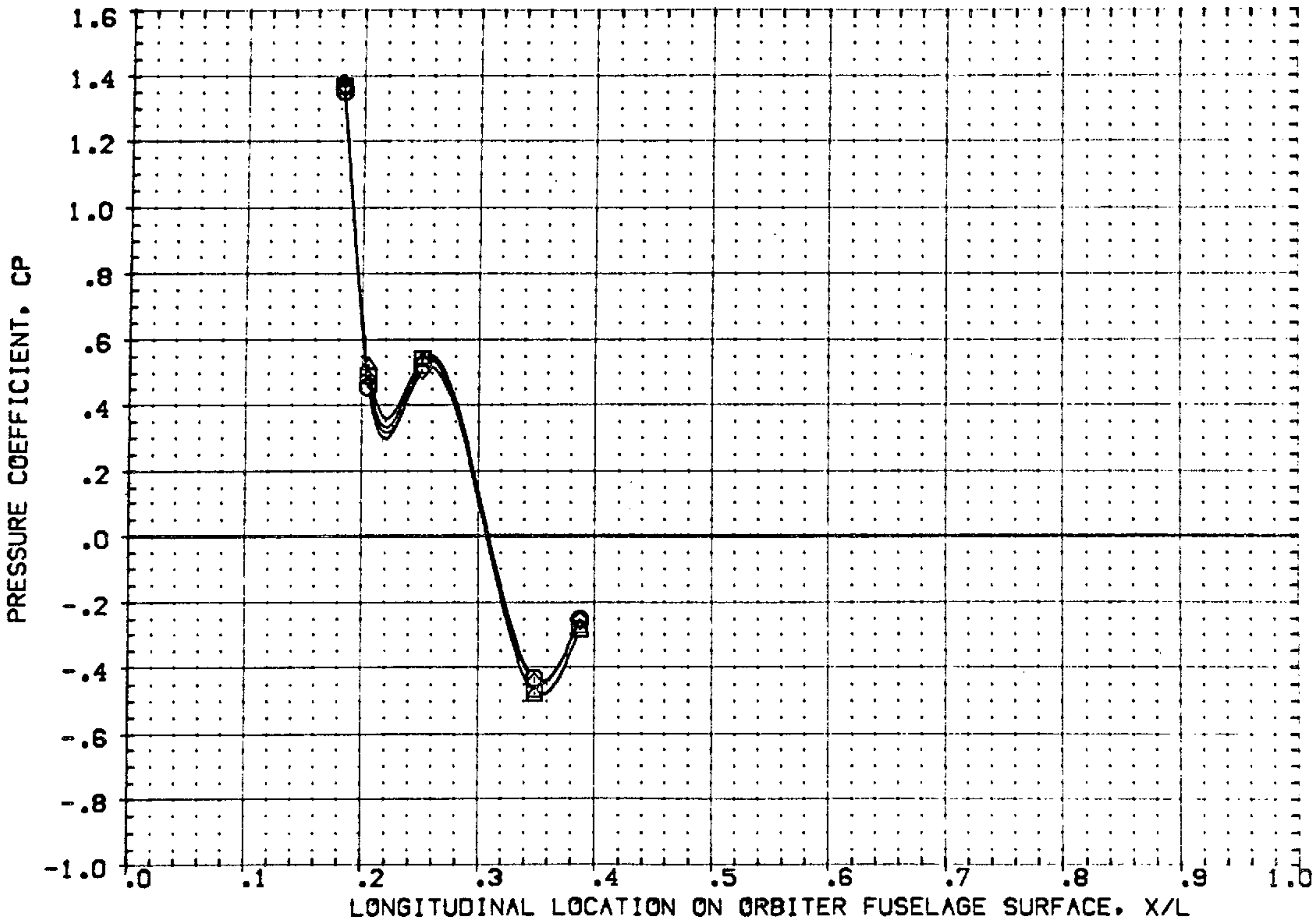


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

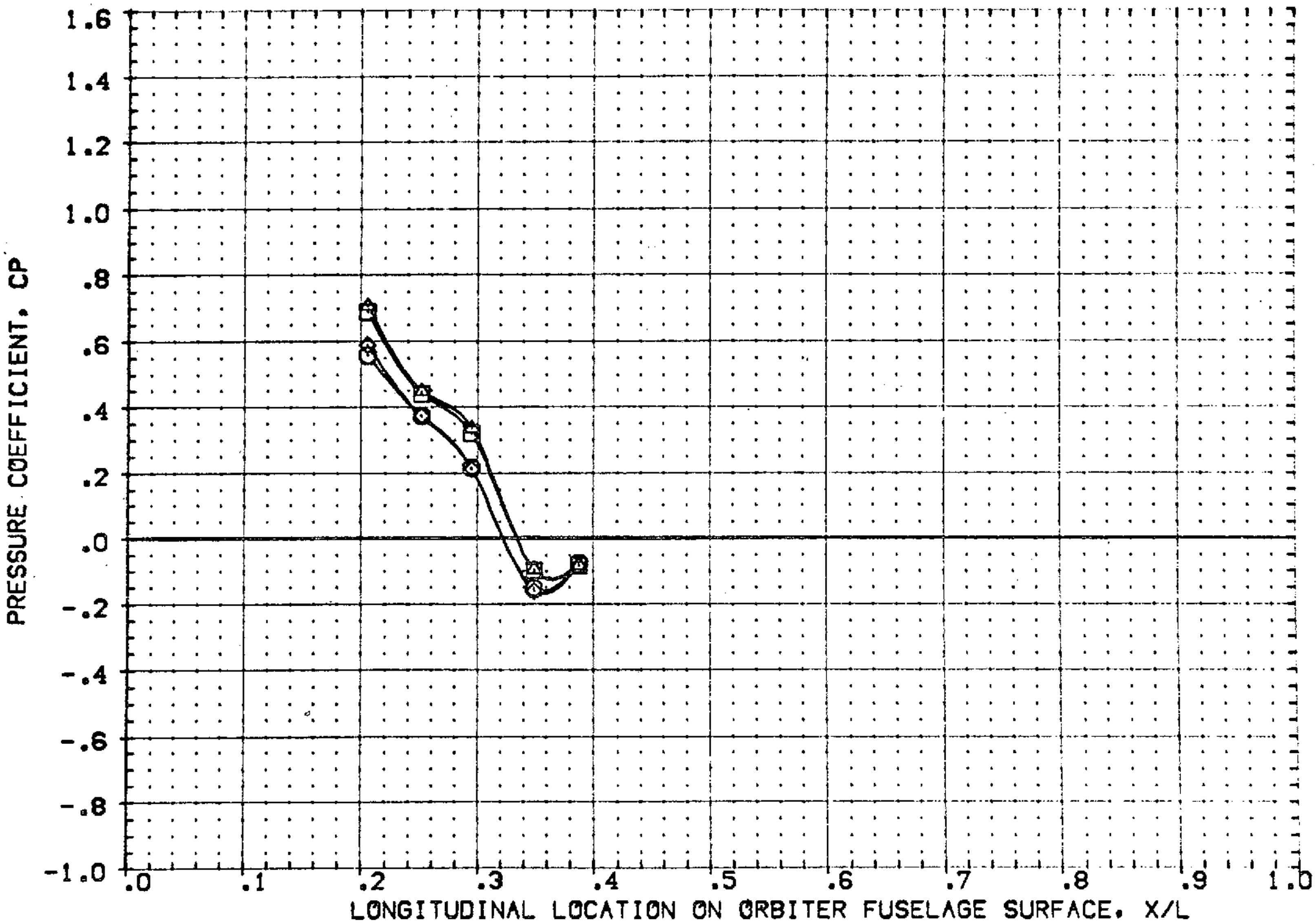


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 PHI = 40.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

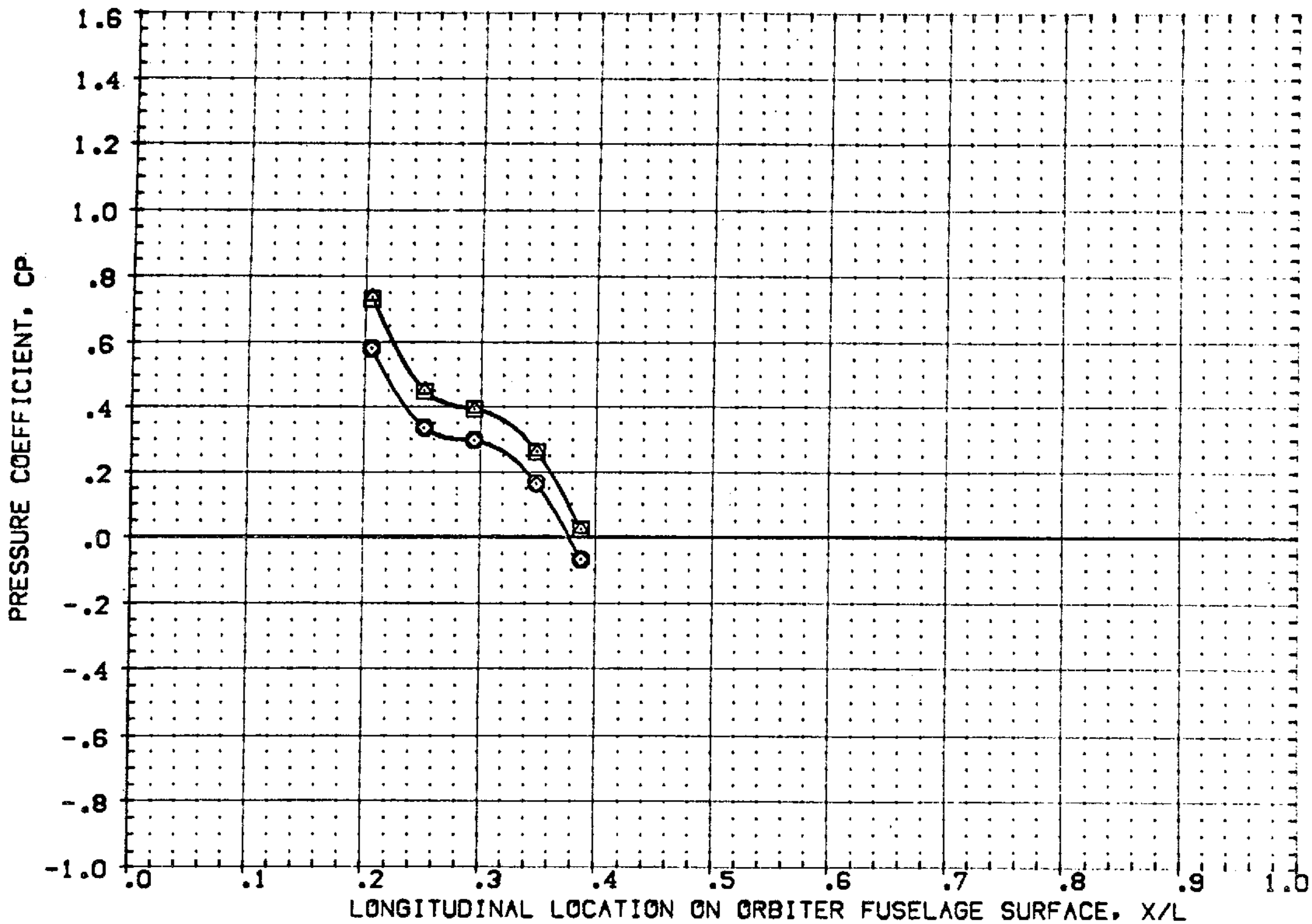


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

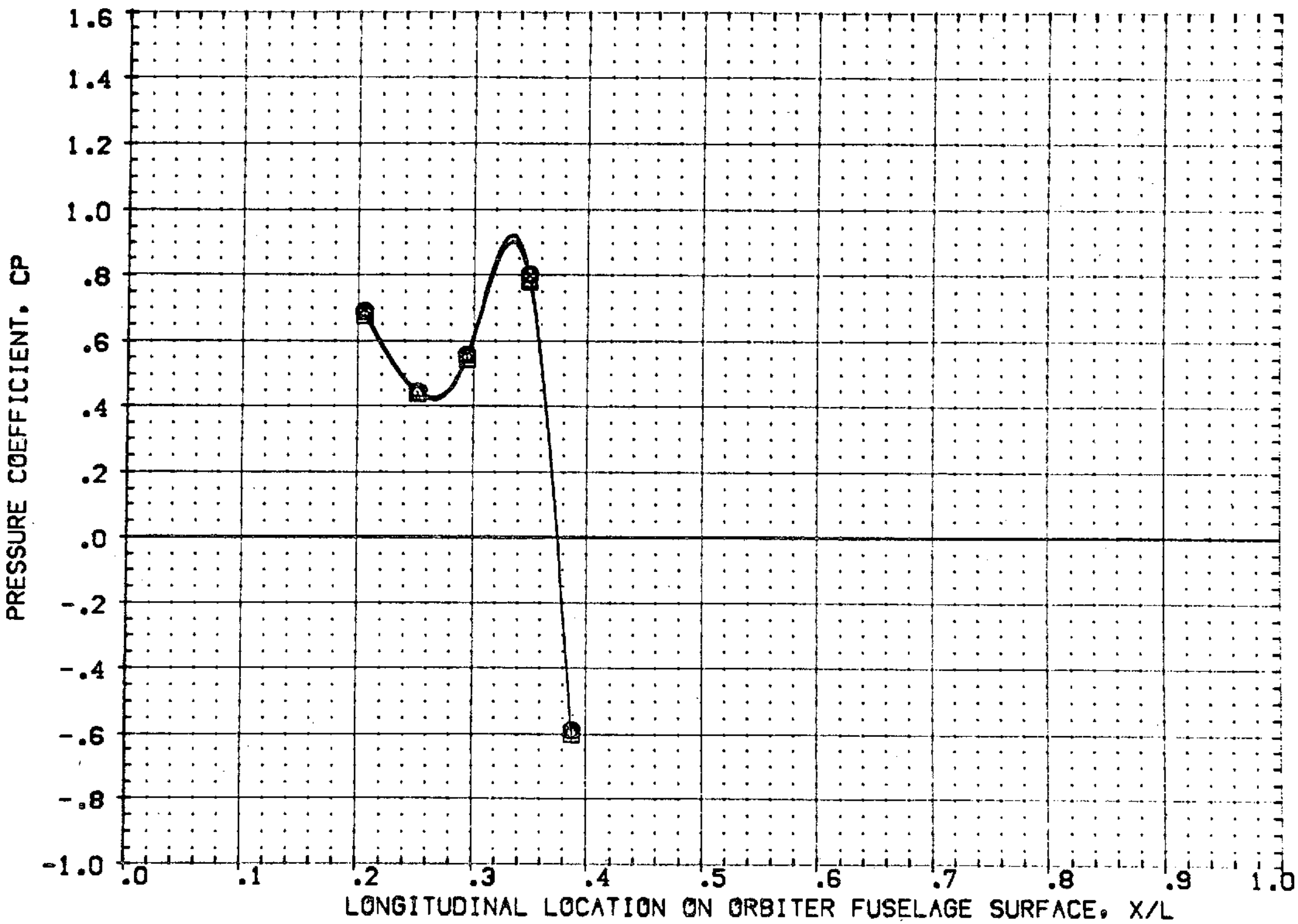


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

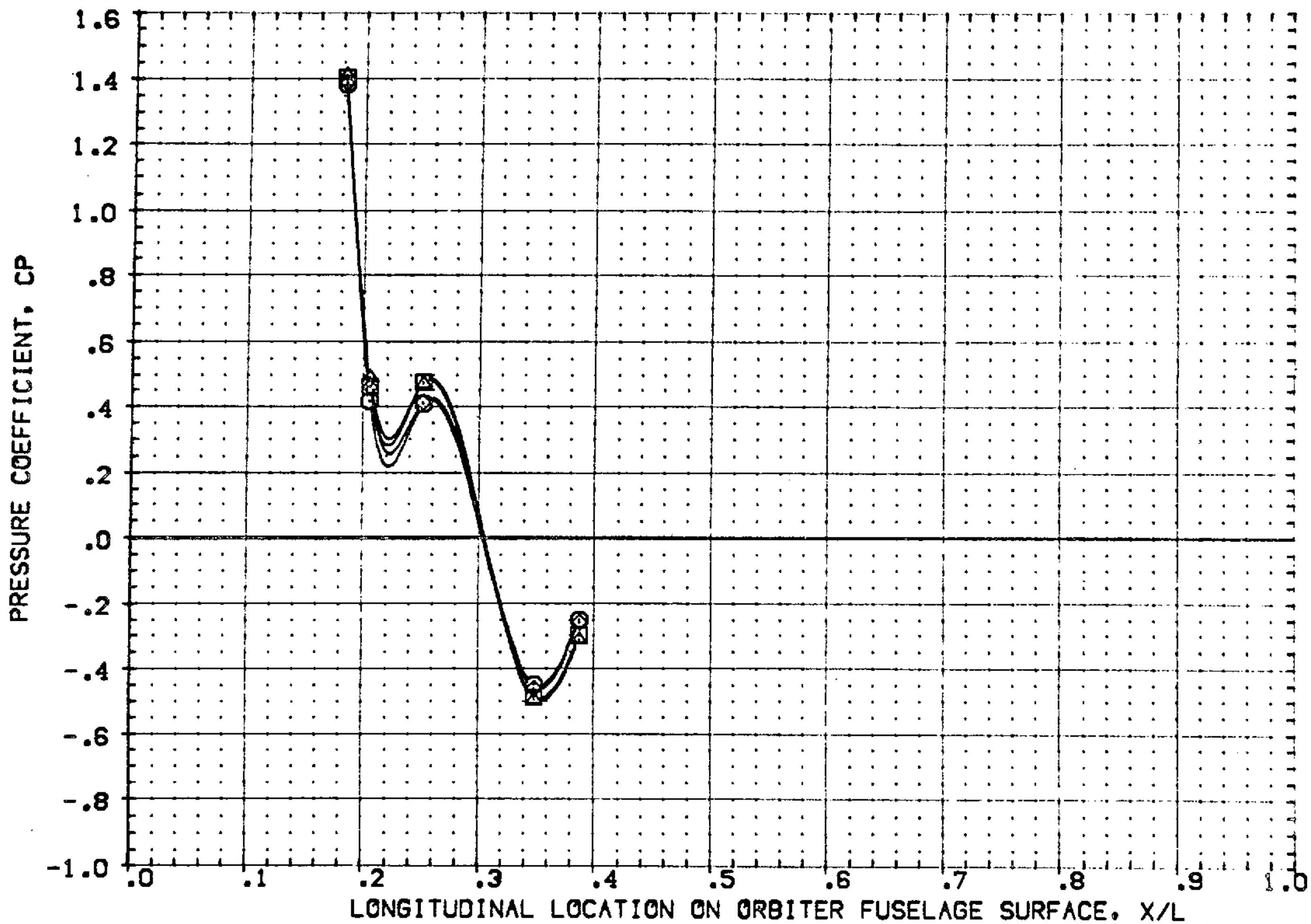


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

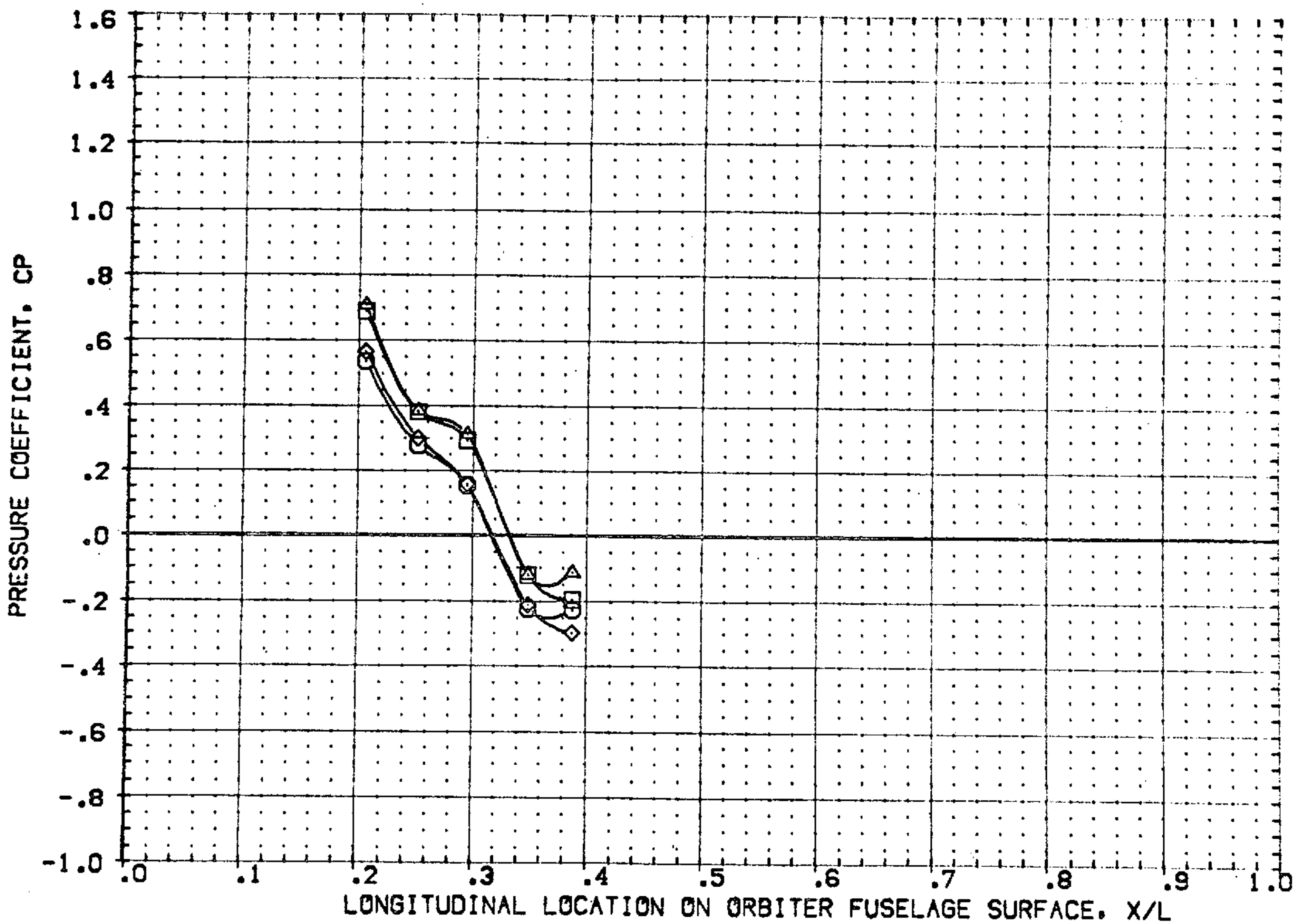


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 PHI = 40.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

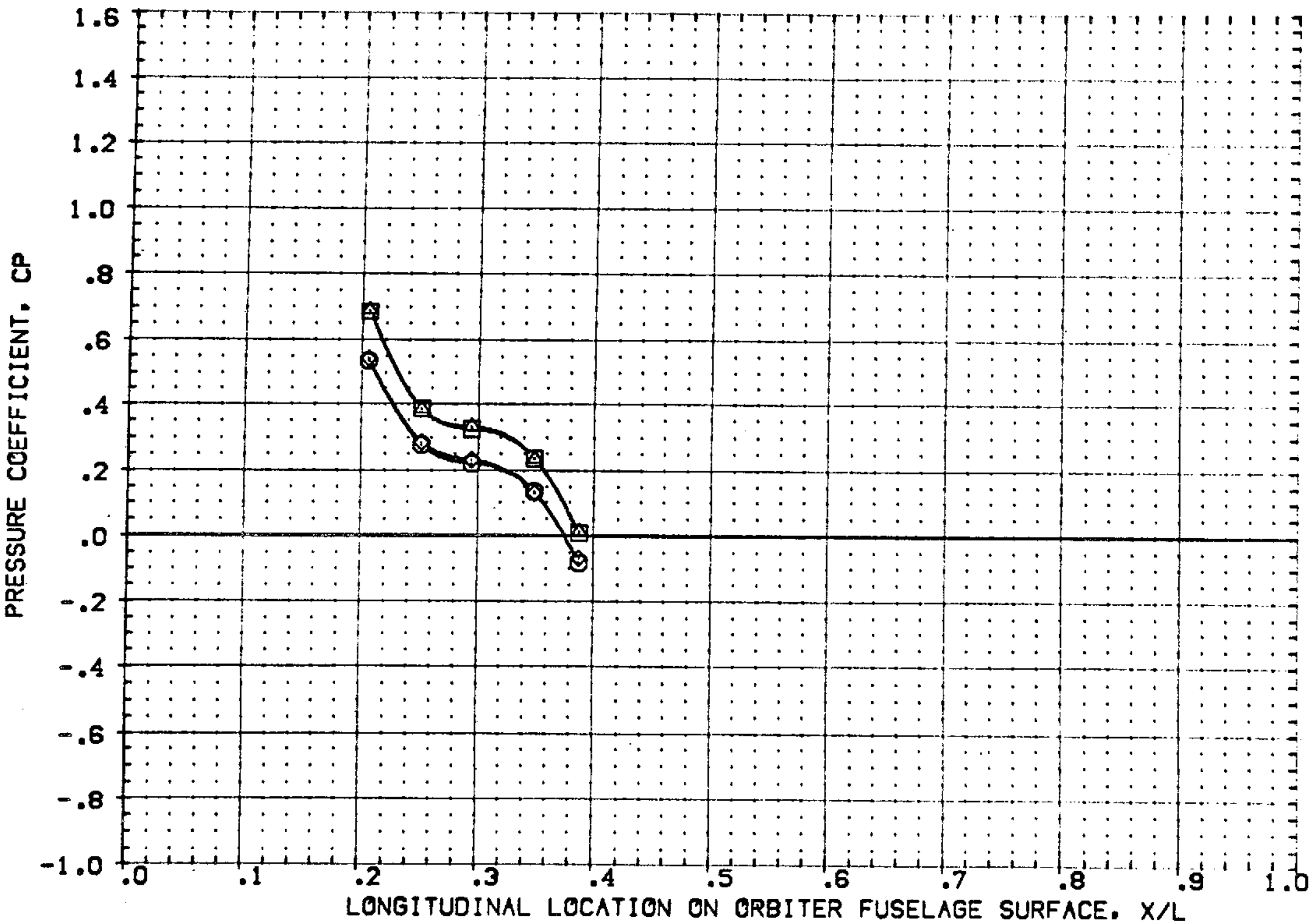


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

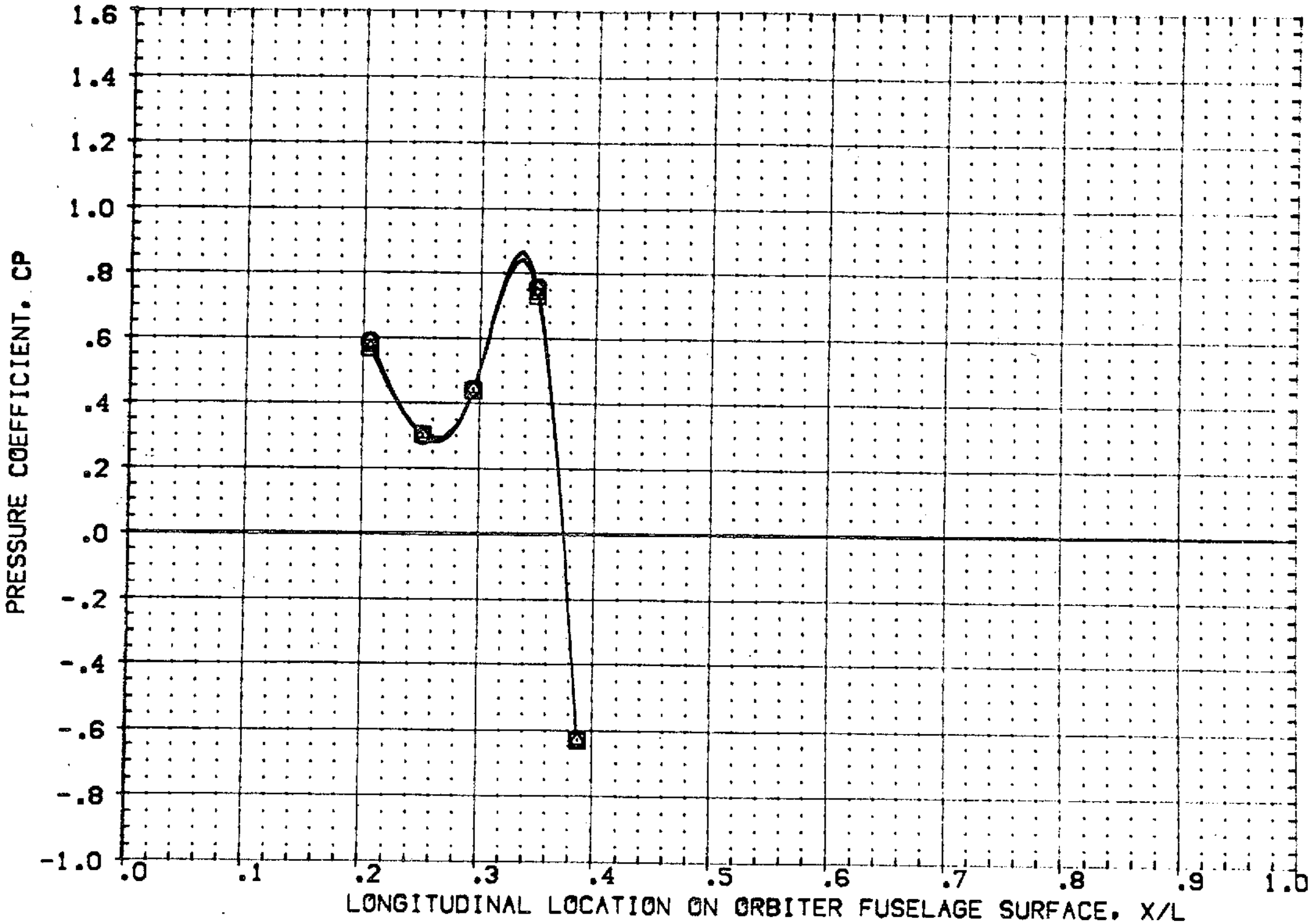


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 PHI = 180.000

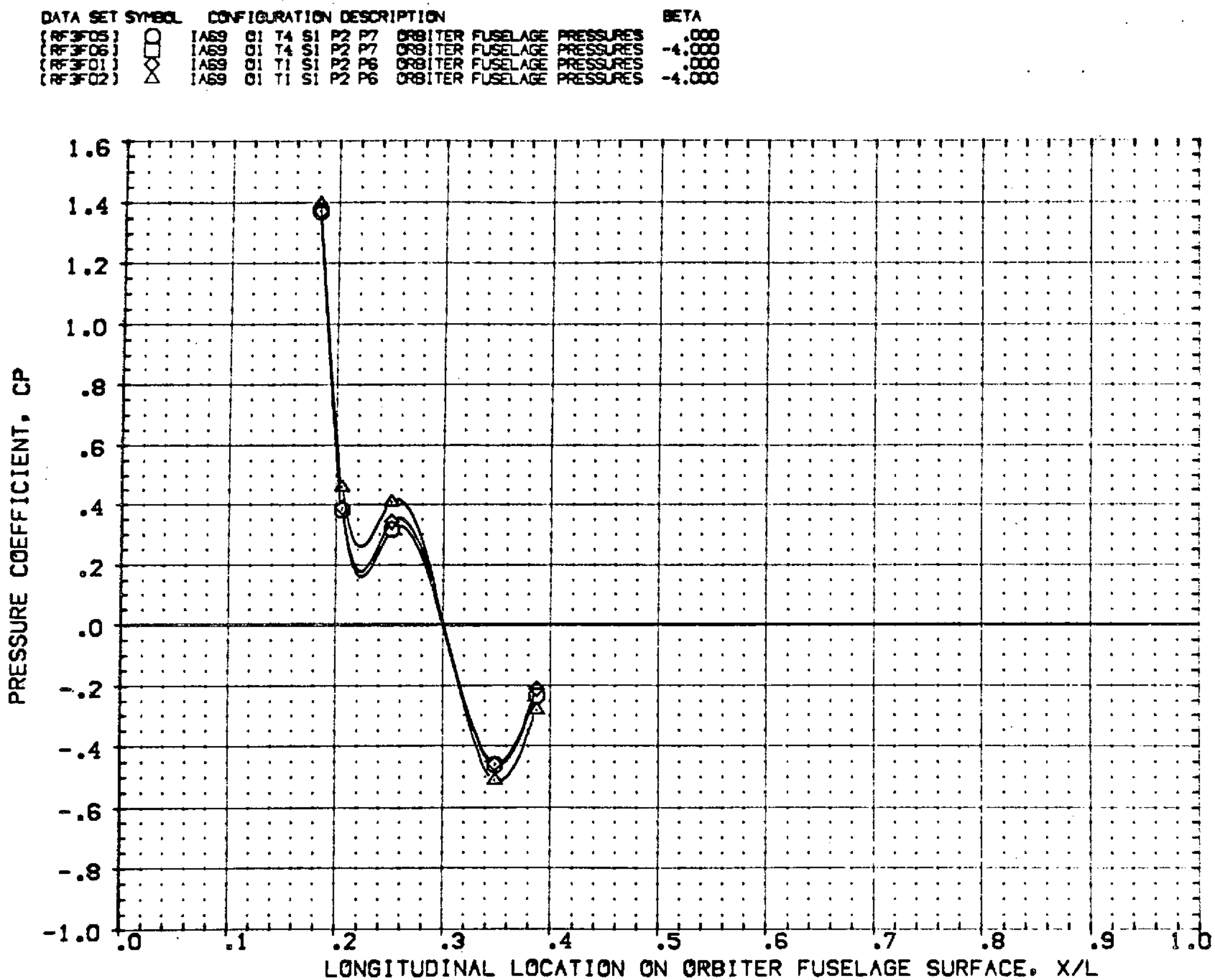


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 PHI = .000

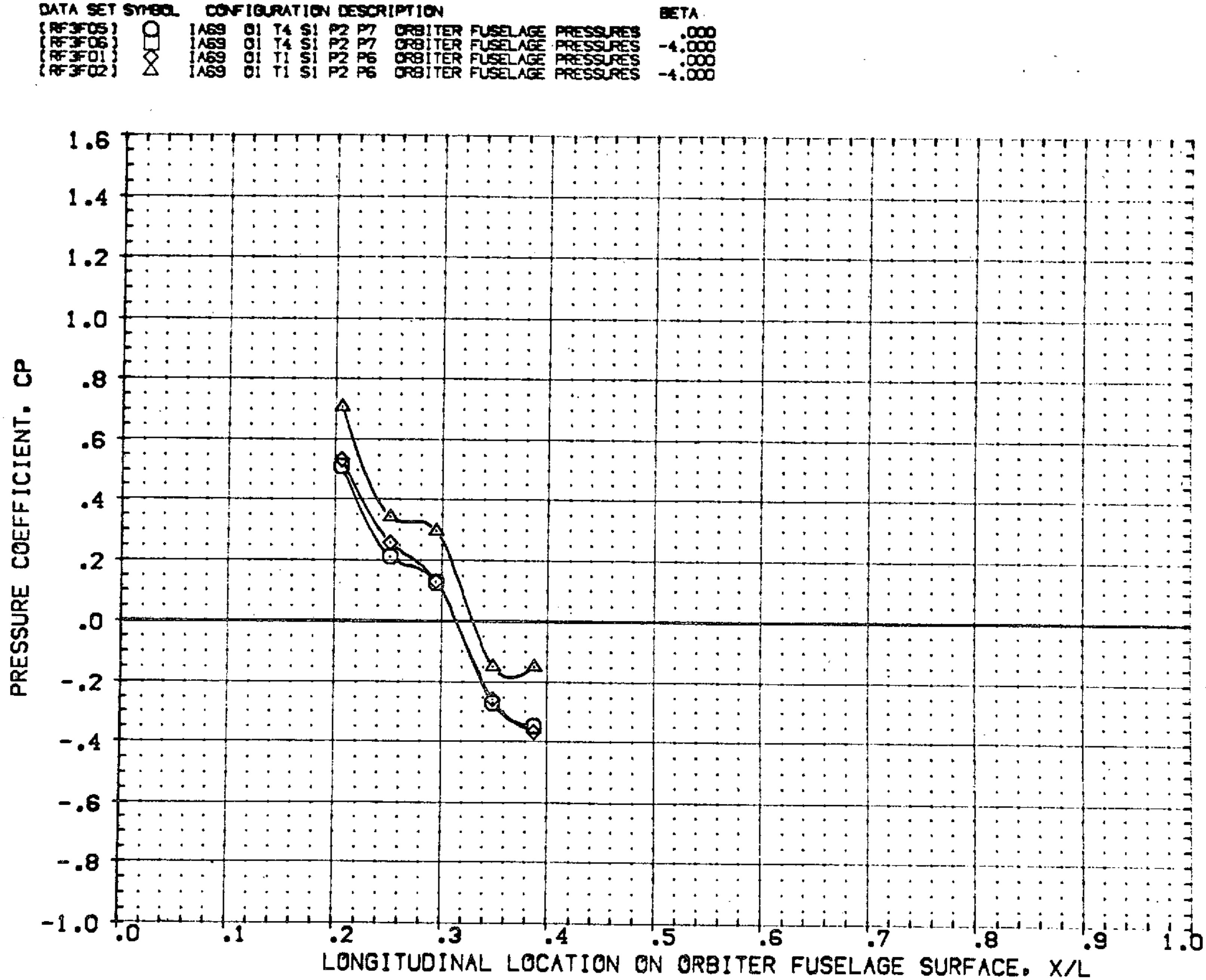


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 PHI = 40.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3F05]	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
[RF3F06]	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
[RF3F01]	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
[RF3F02]	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

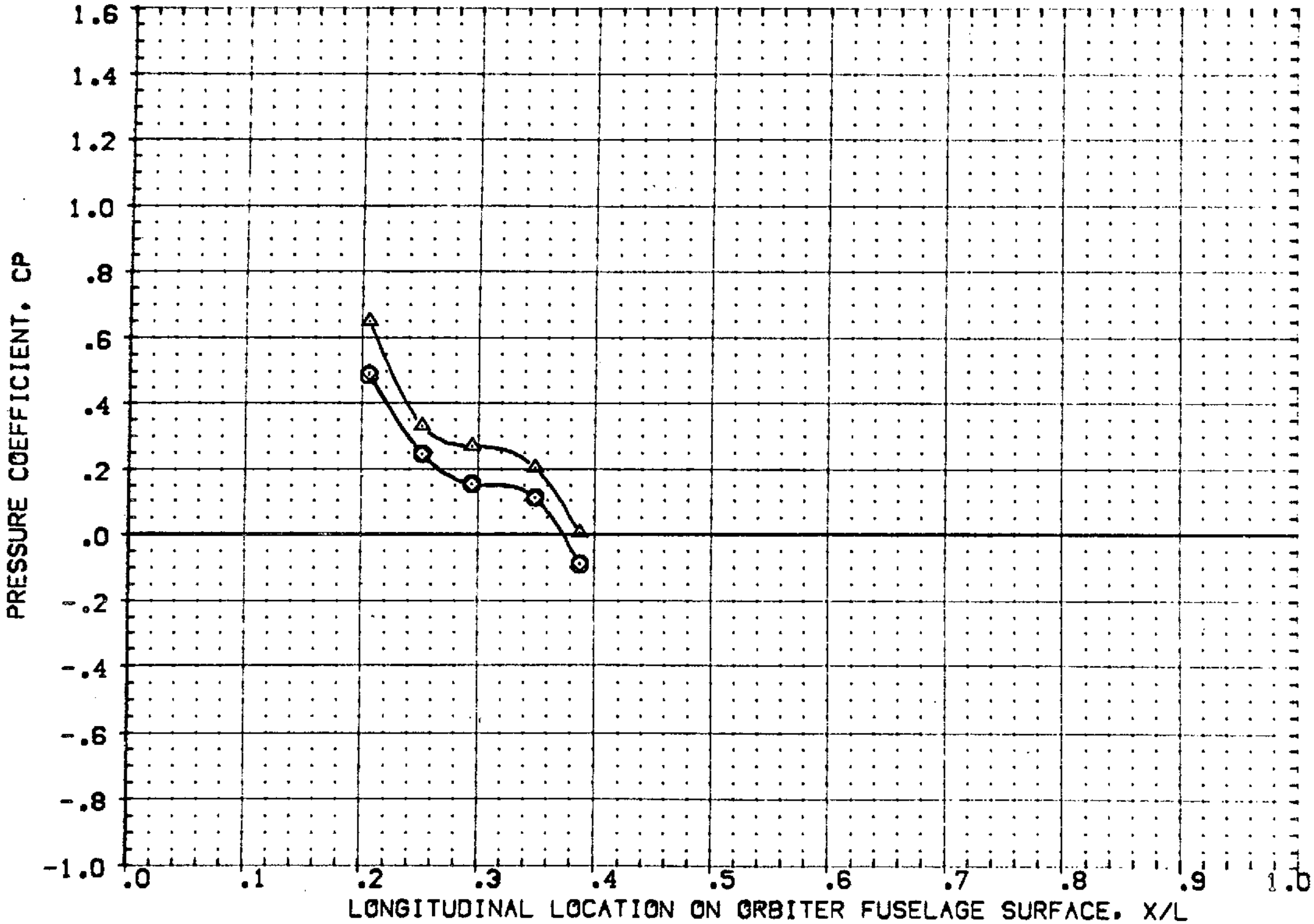


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

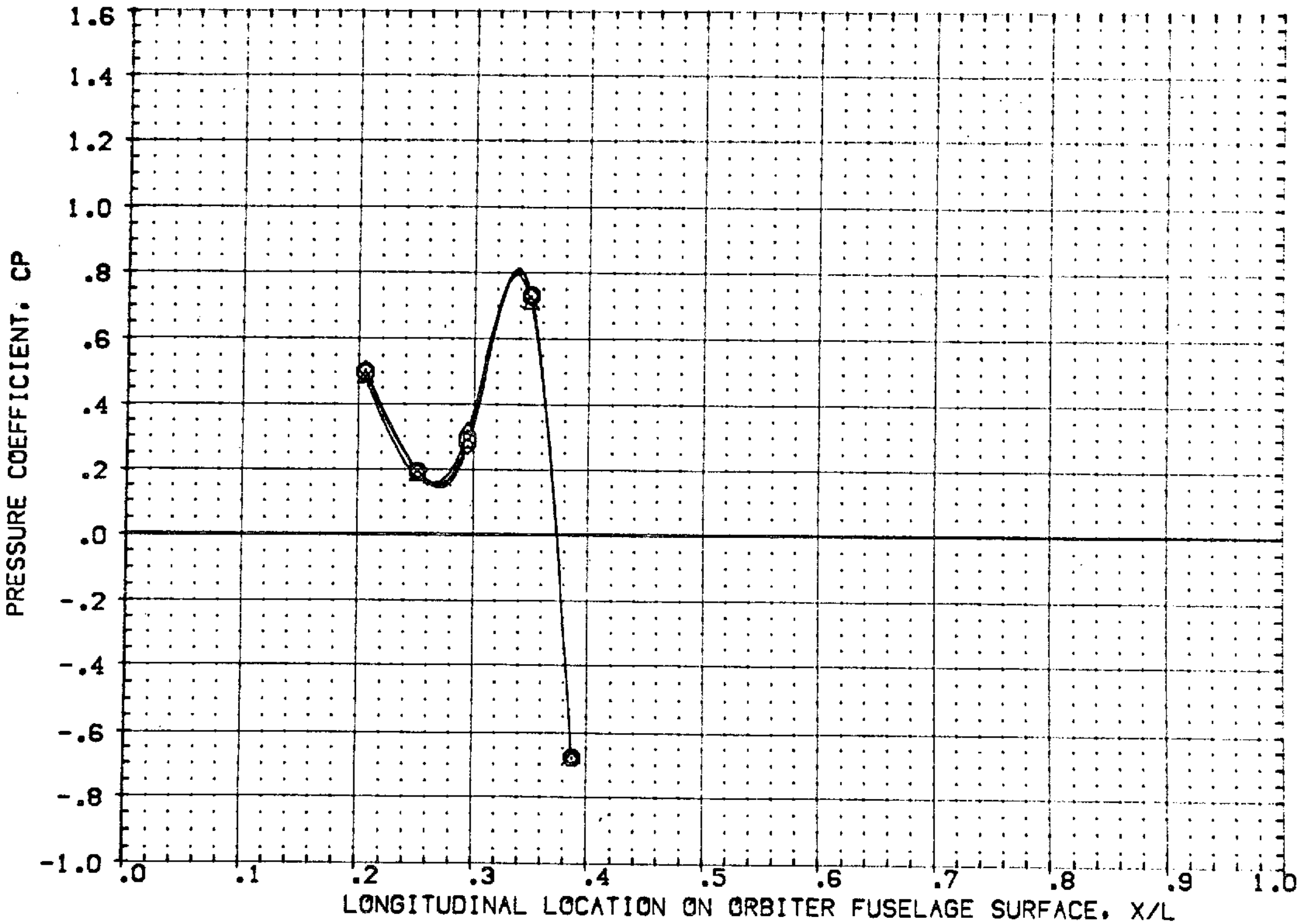


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

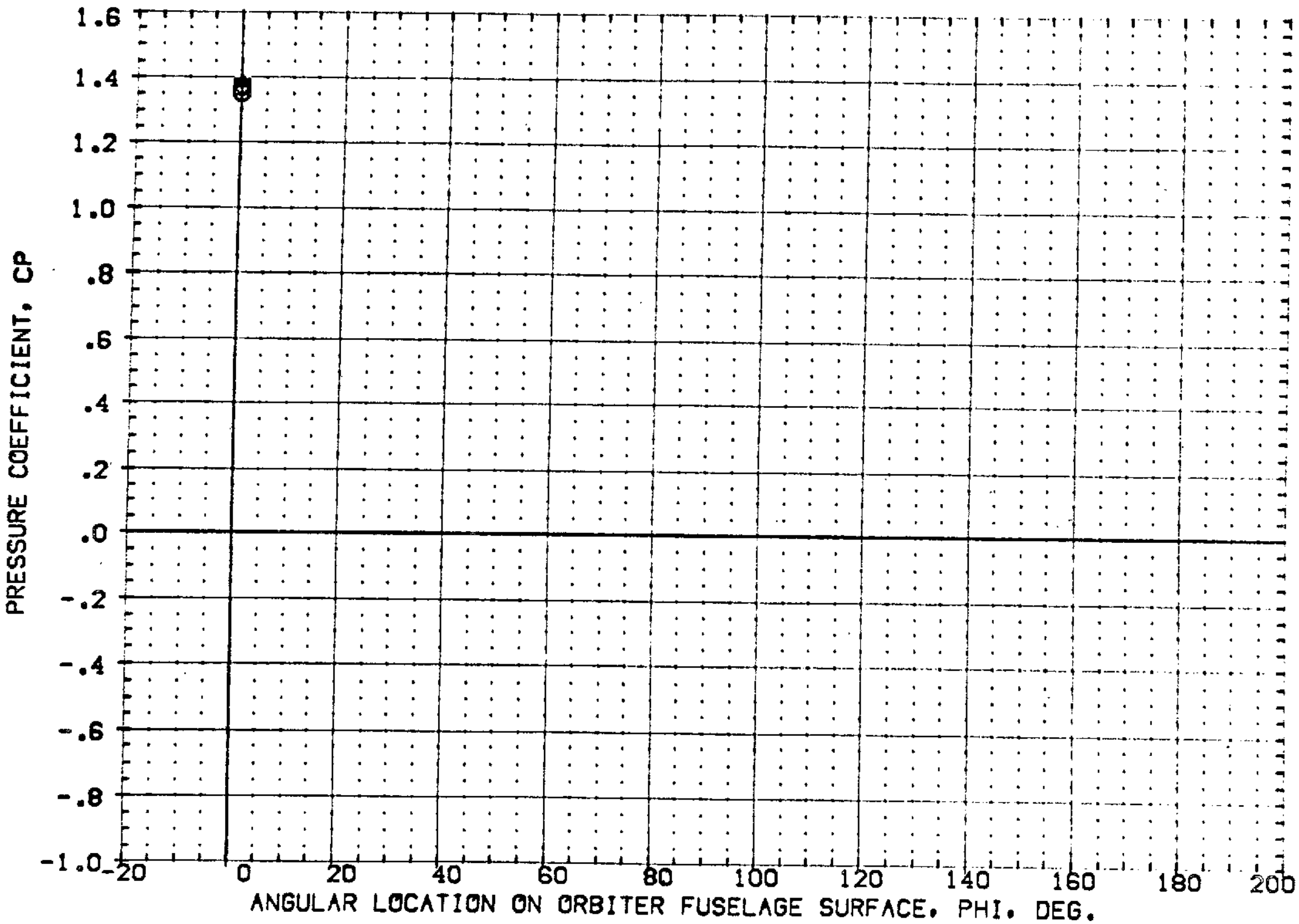


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/L = .182

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

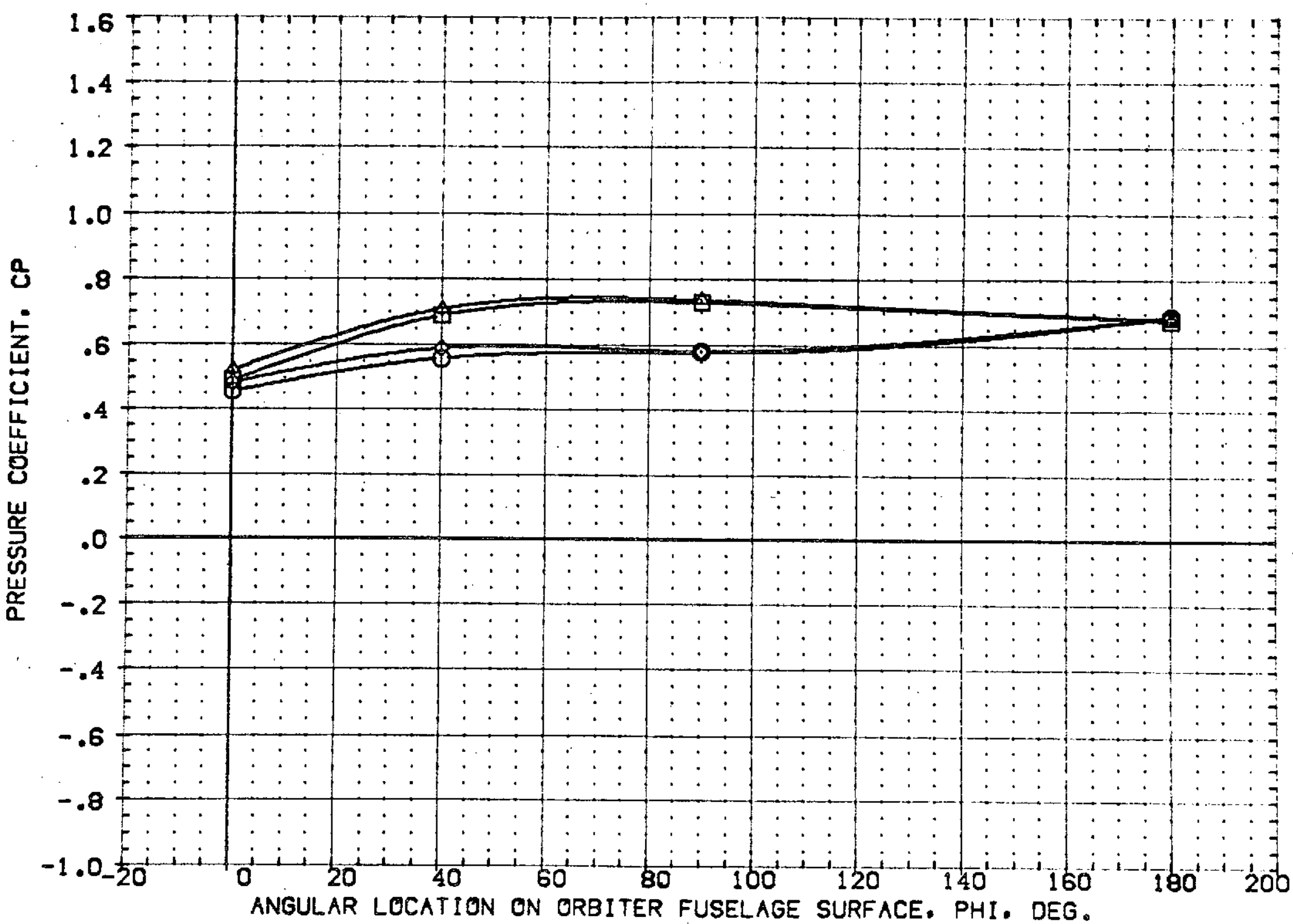


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/L = .205

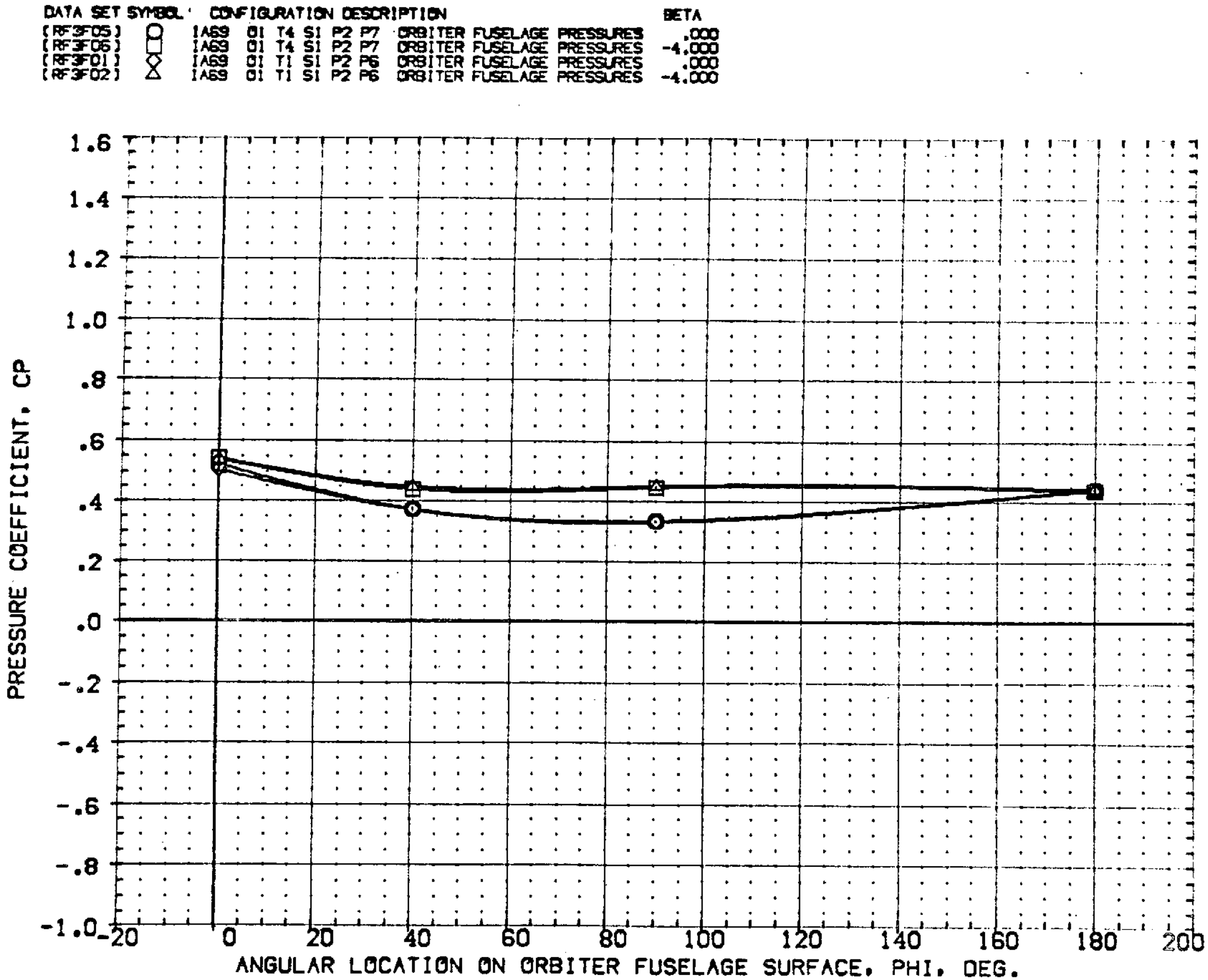


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/L = .252

DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

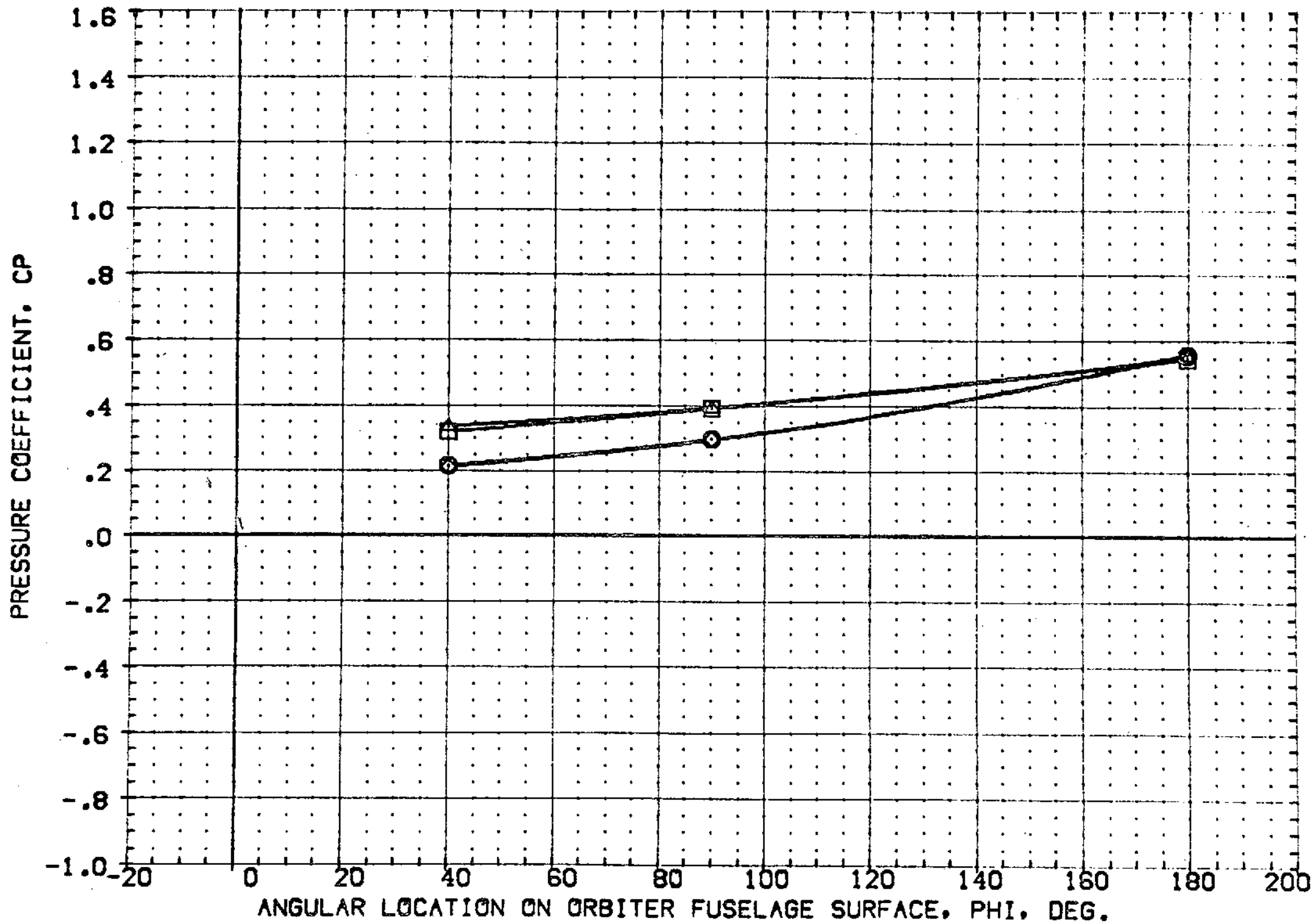


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/L = .295

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

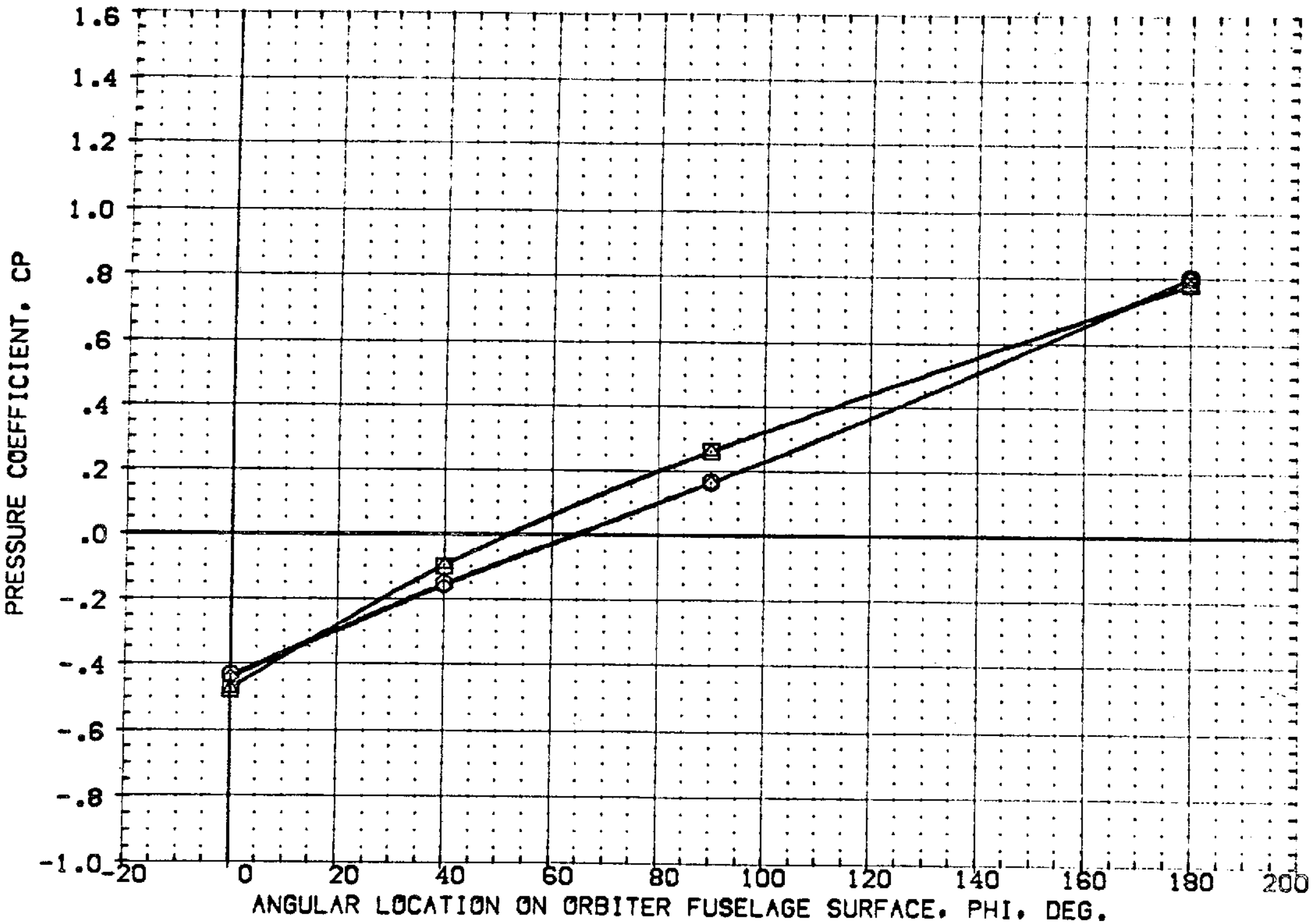


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/L = .349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

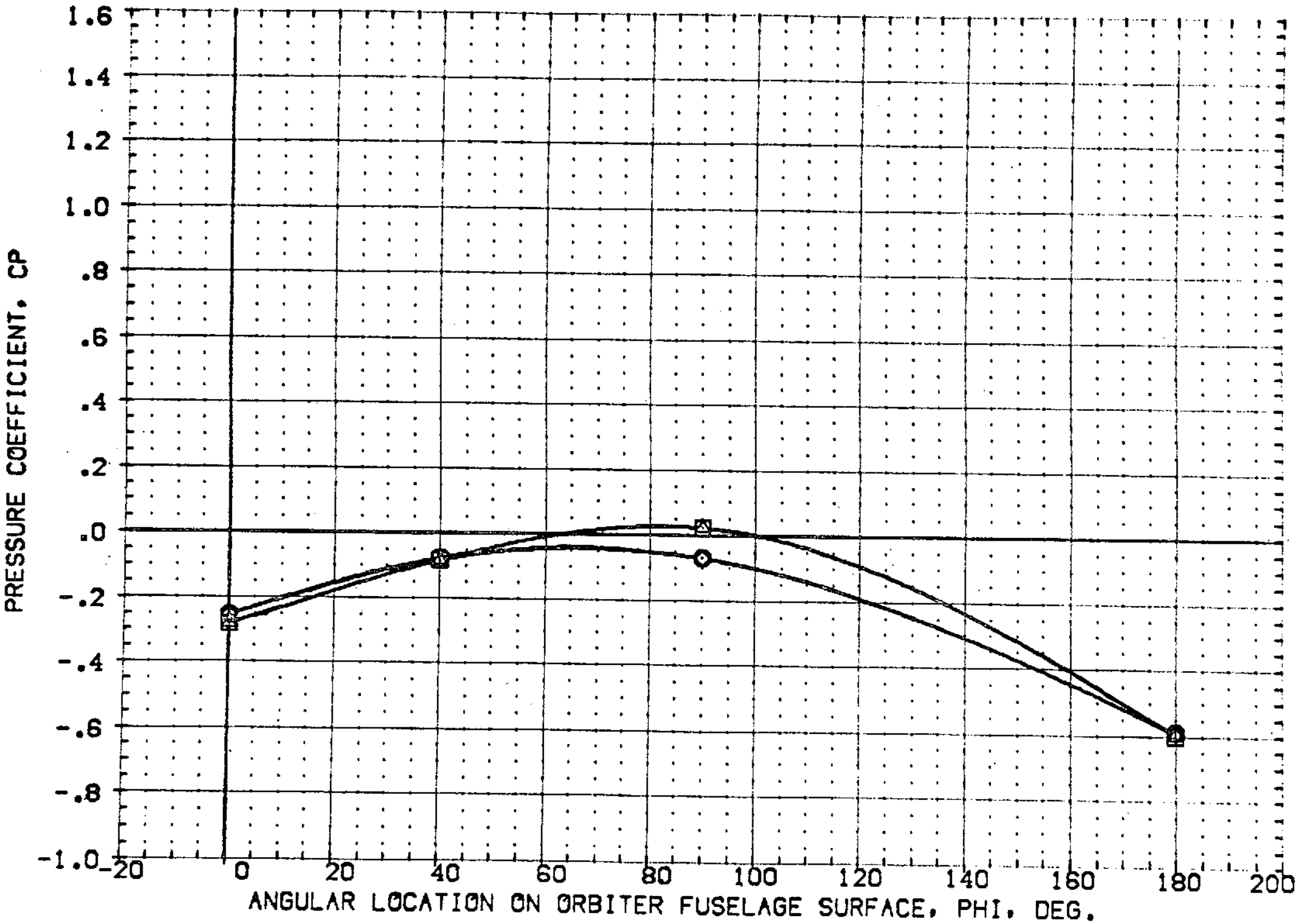


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = -4.000 X/L = .388

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

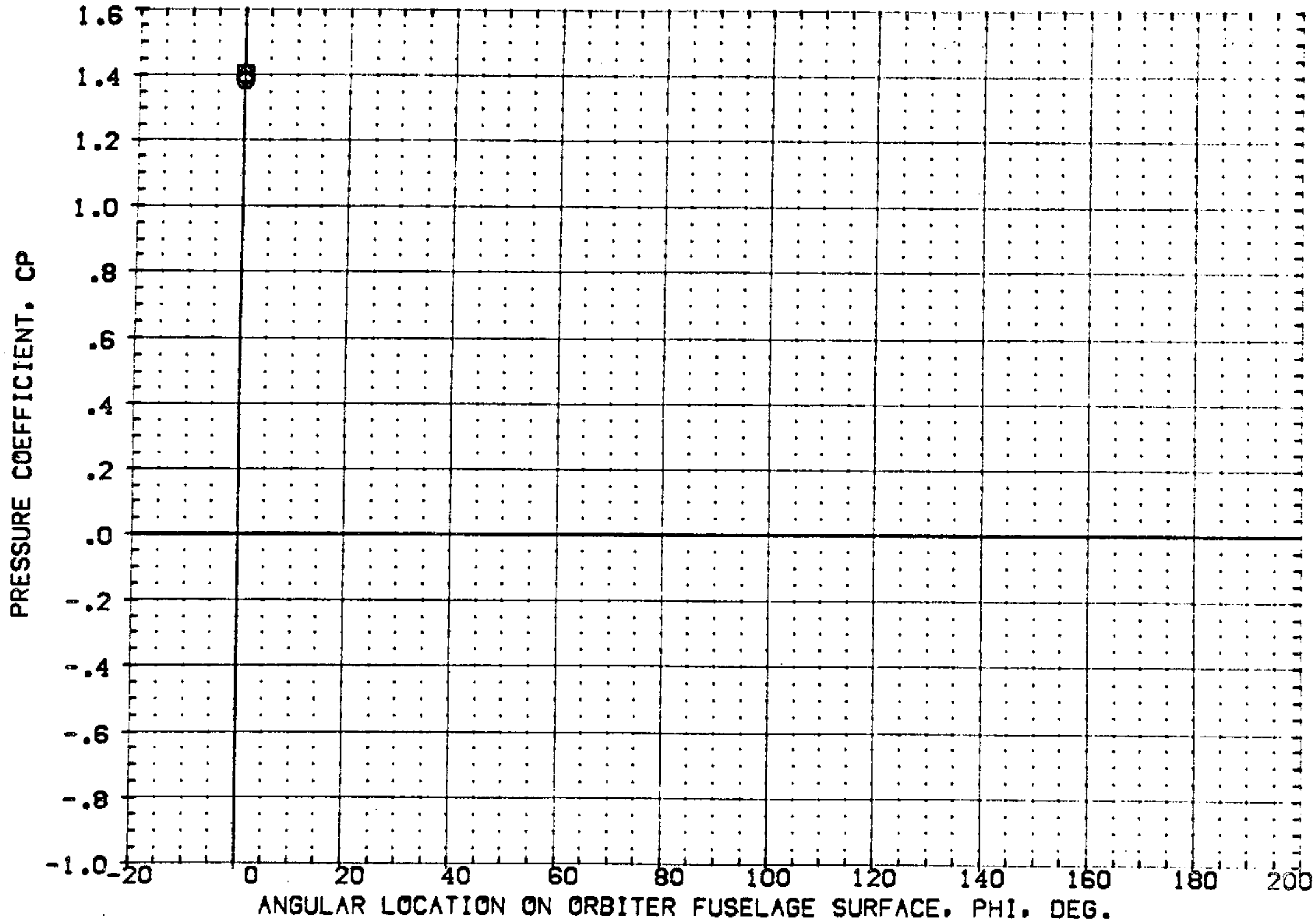


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/L = .182

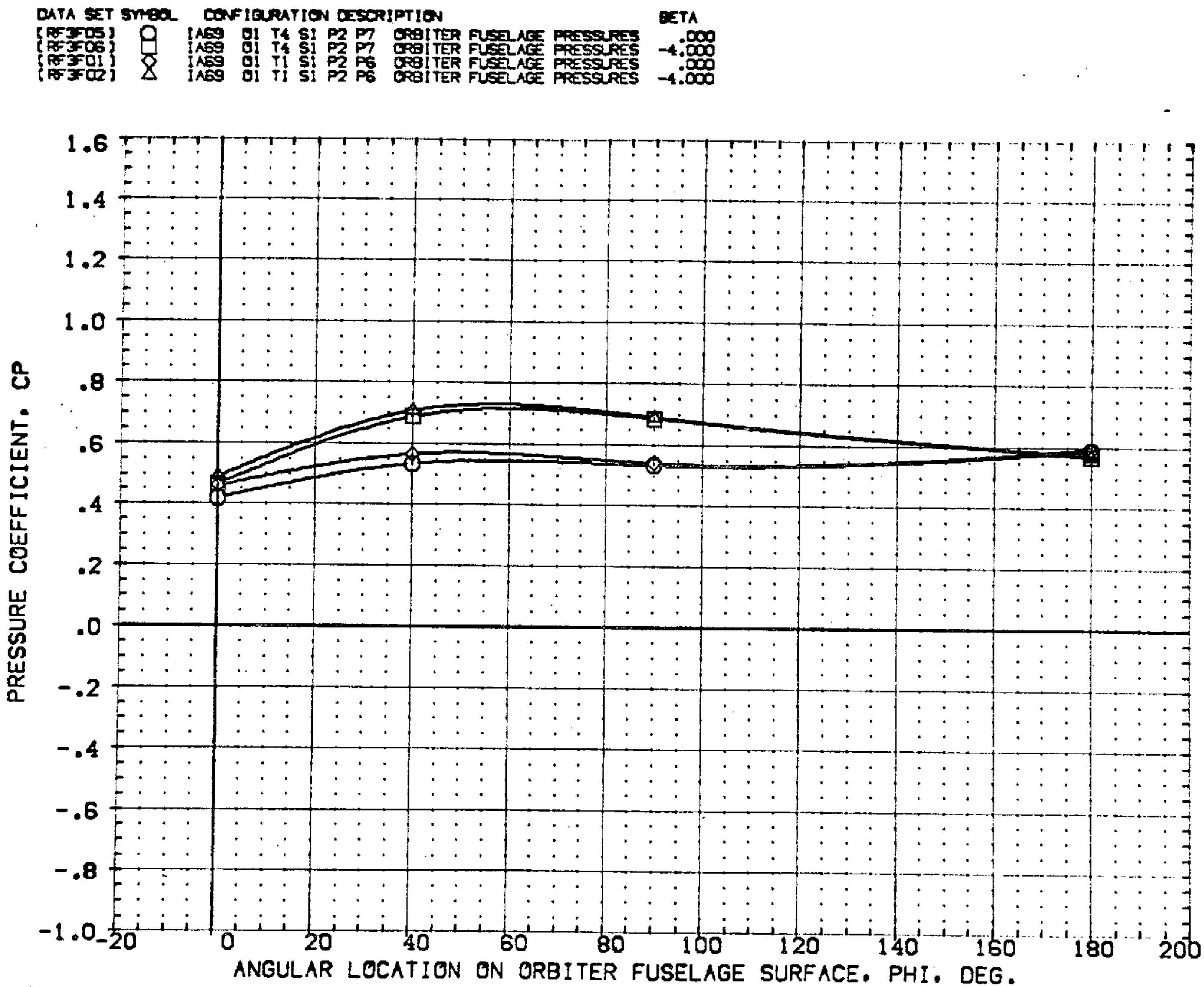


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/L = .205

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3F05]	○	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
[RF3F06]	□	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
[RF3F01]	◇	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
[RF3F02]	△	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

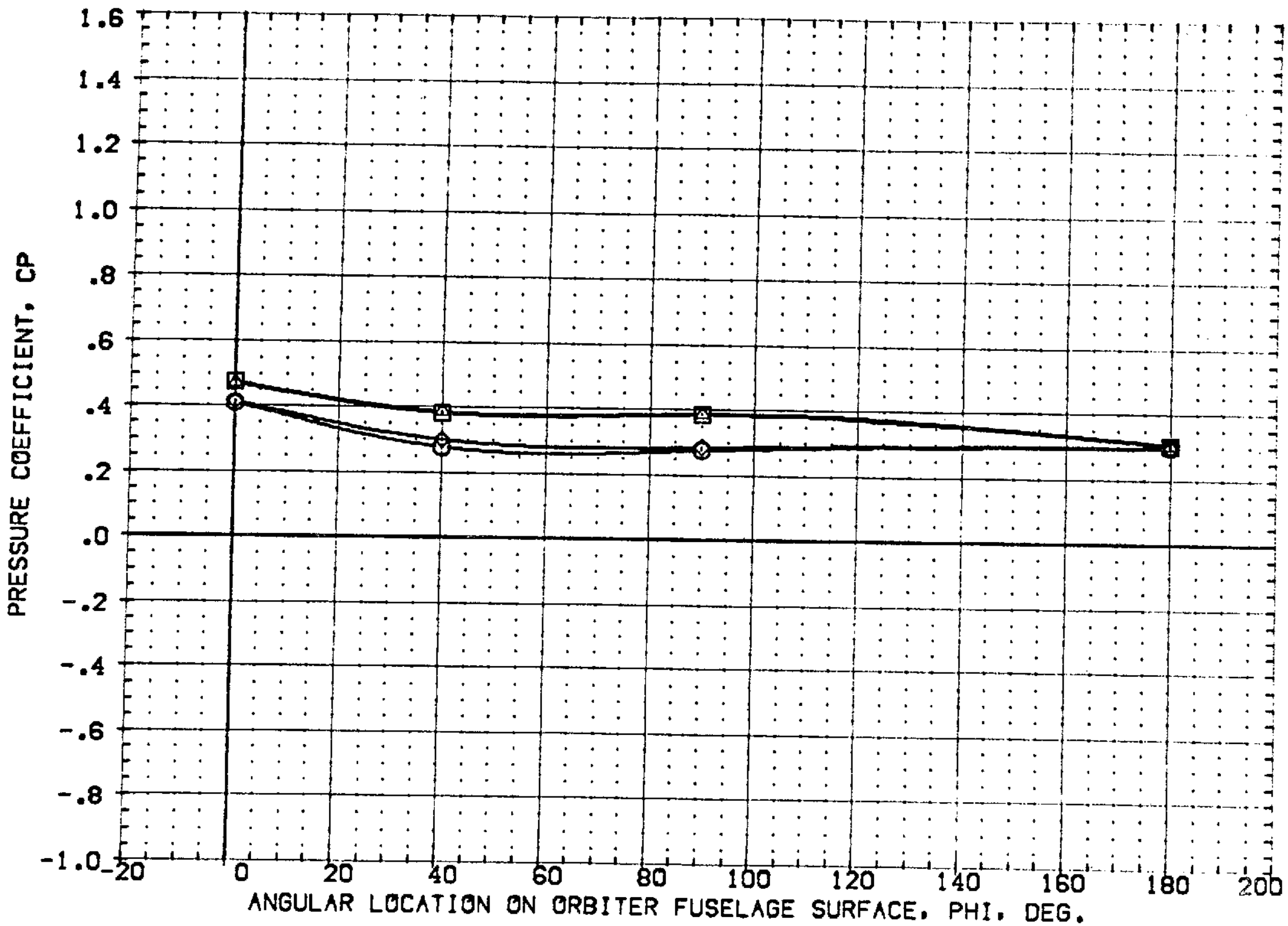


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/L = .252

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3F05]	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
[RF3F06]	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
[RF3F01]	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
[RF3F02]	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

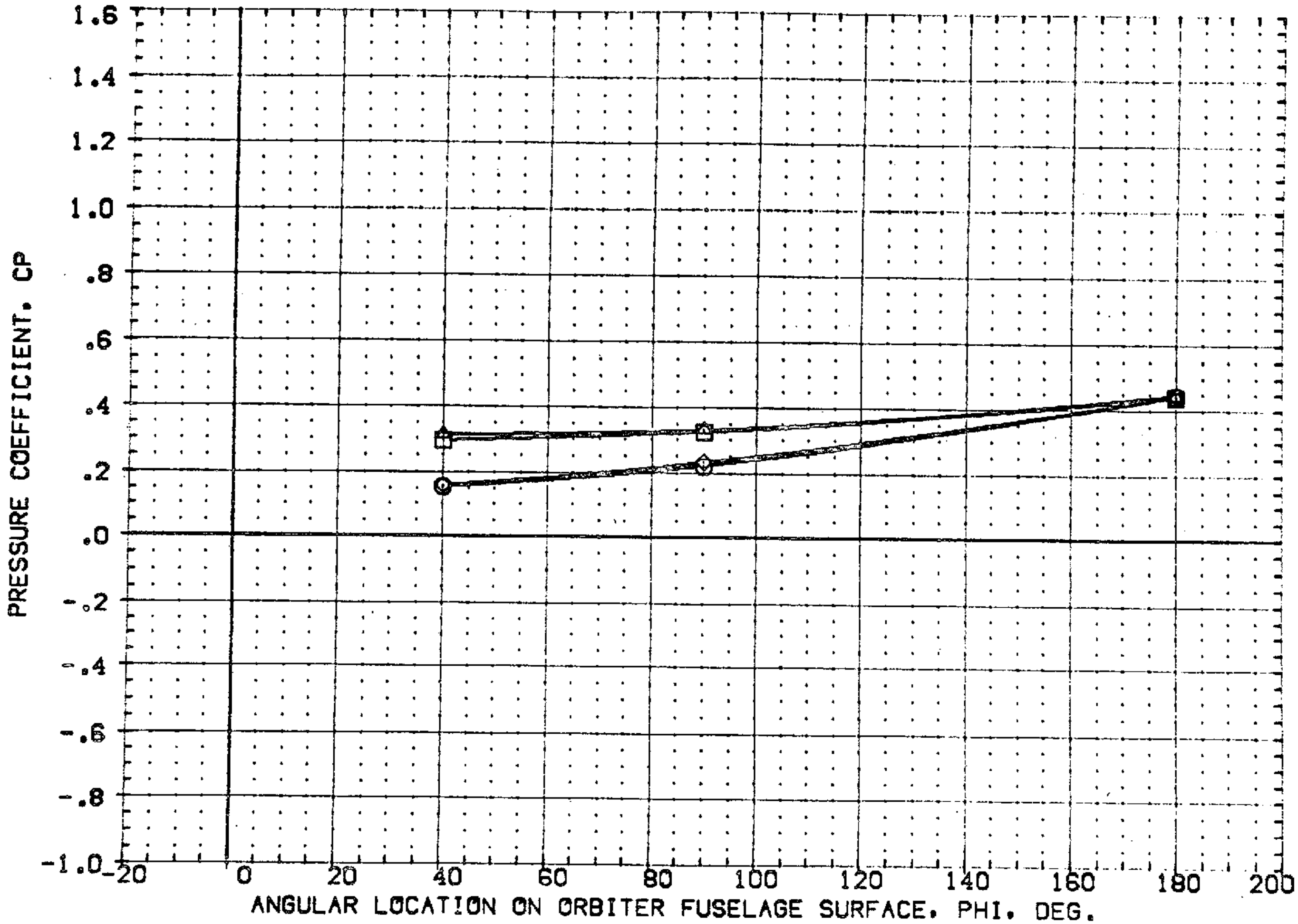


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/L = .295

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

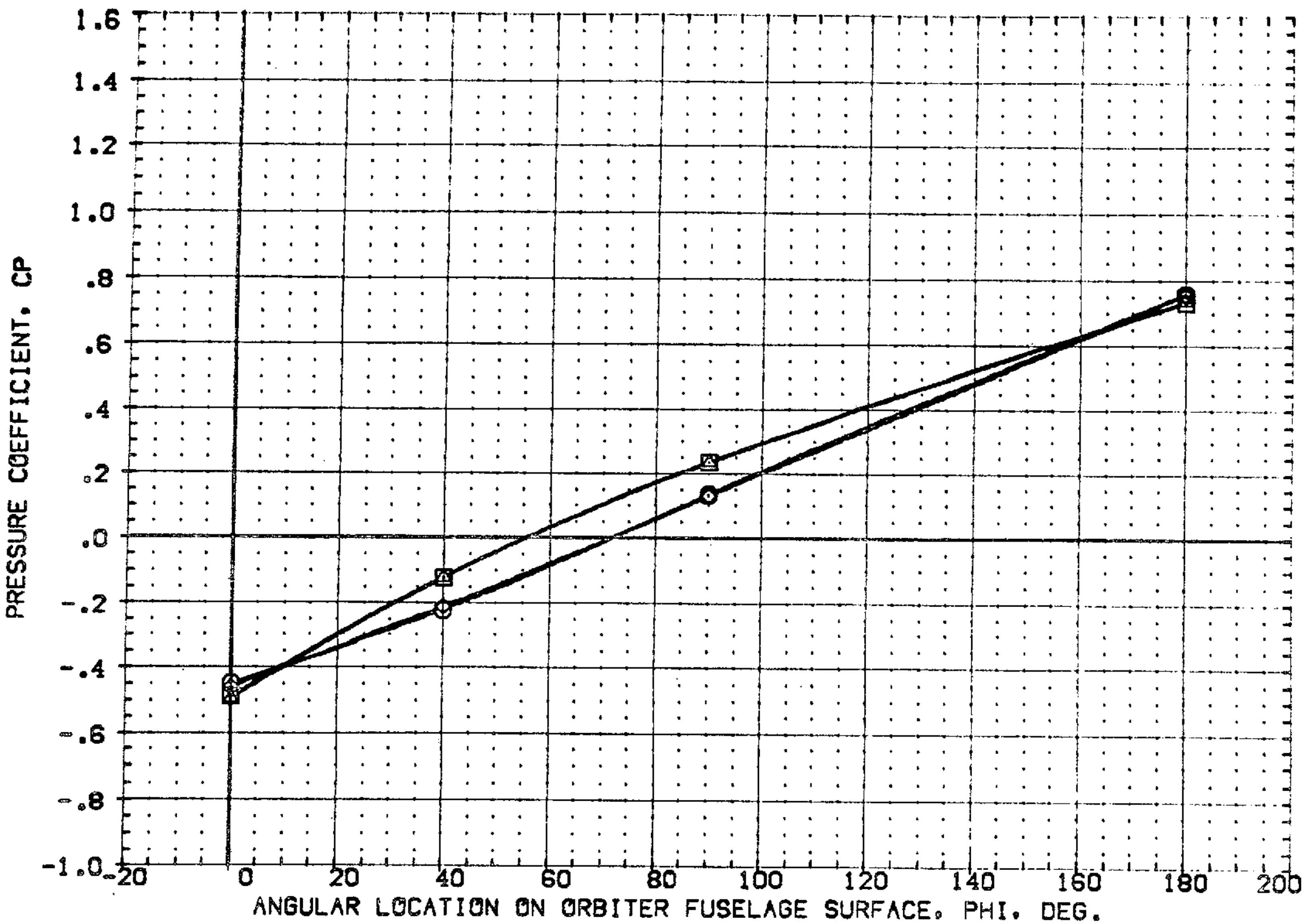


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/L = .349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

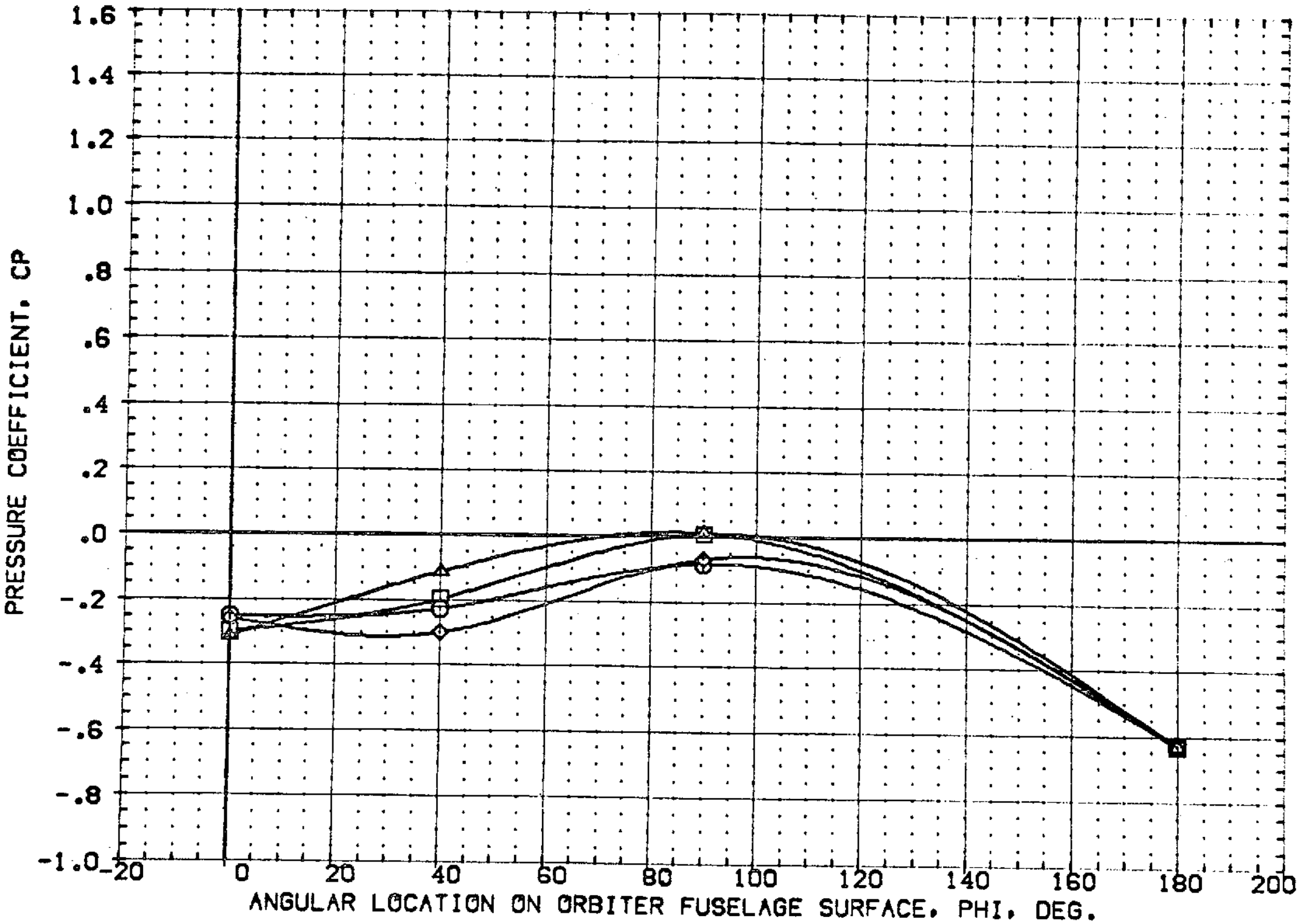


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = .000 X/L = .388

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

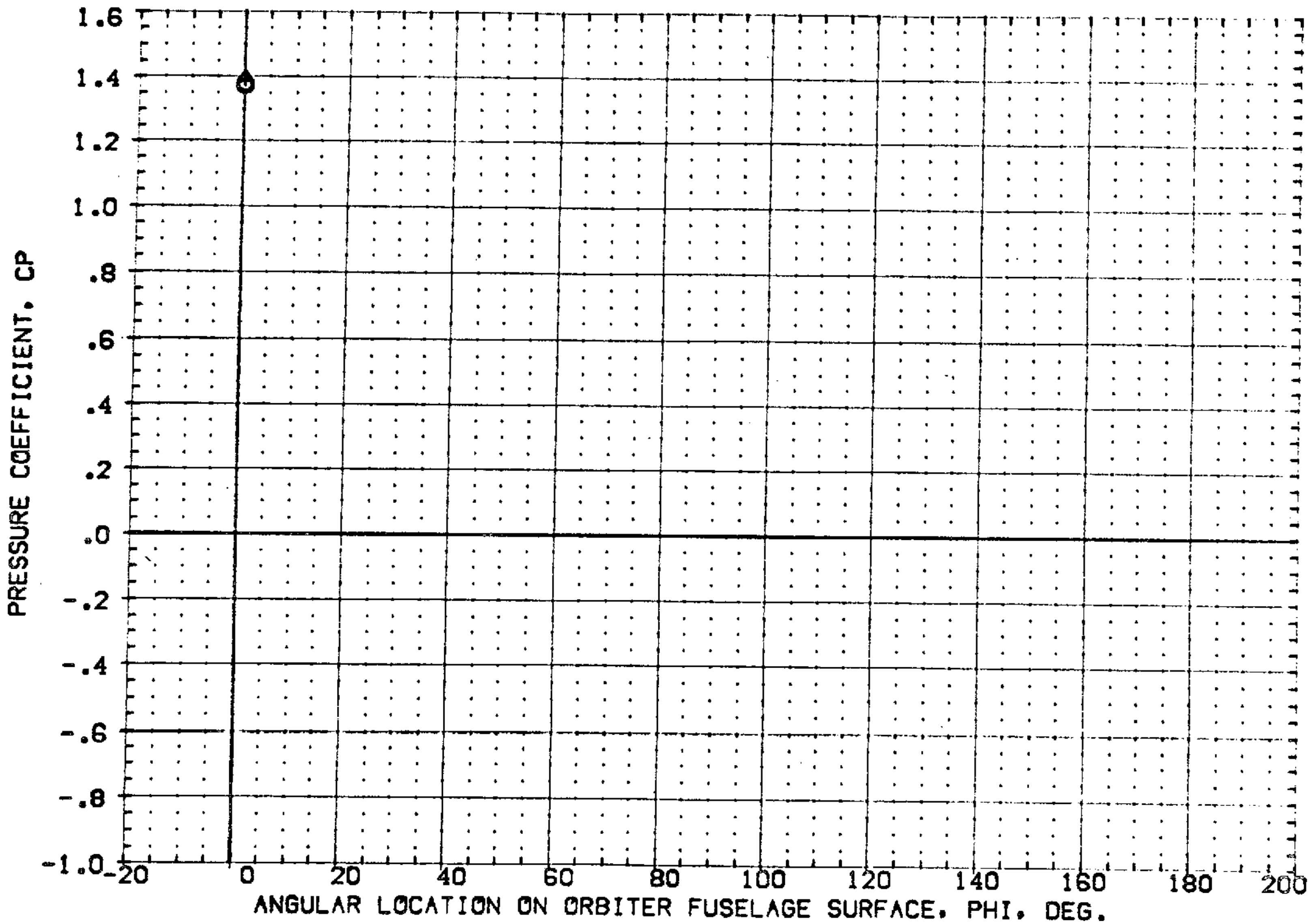


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/L = .182

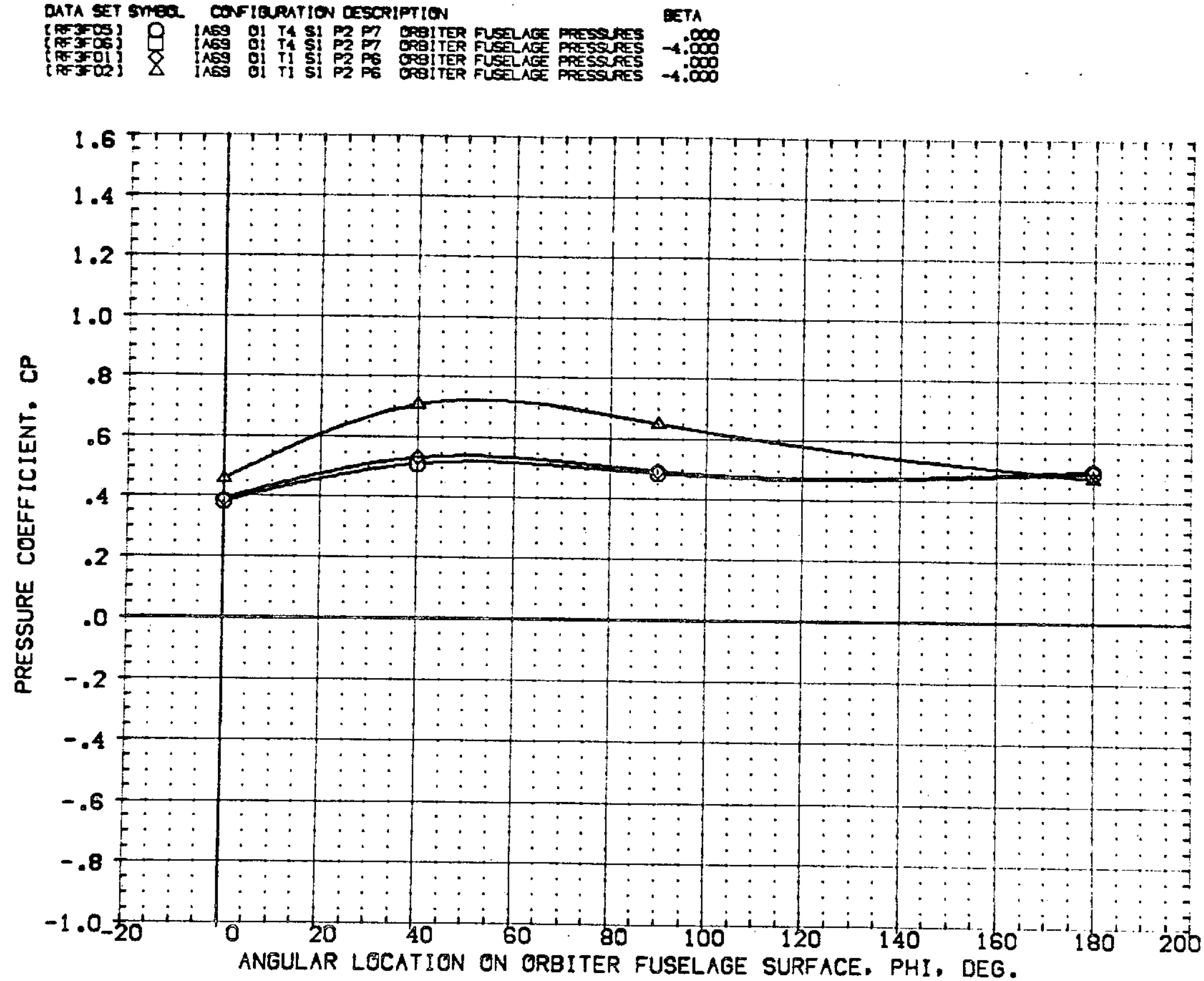


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/L = .205

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

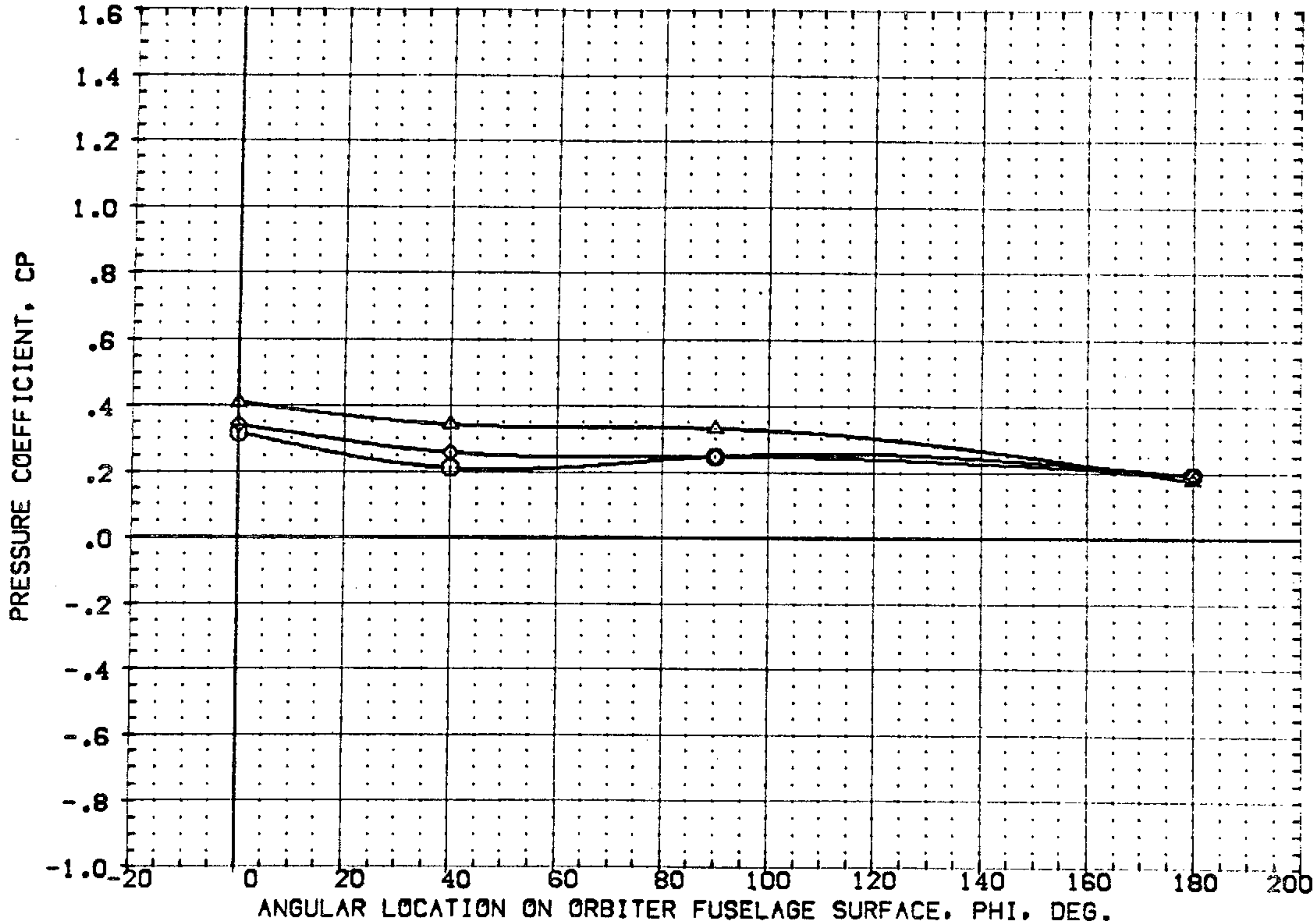


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/L = .252

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

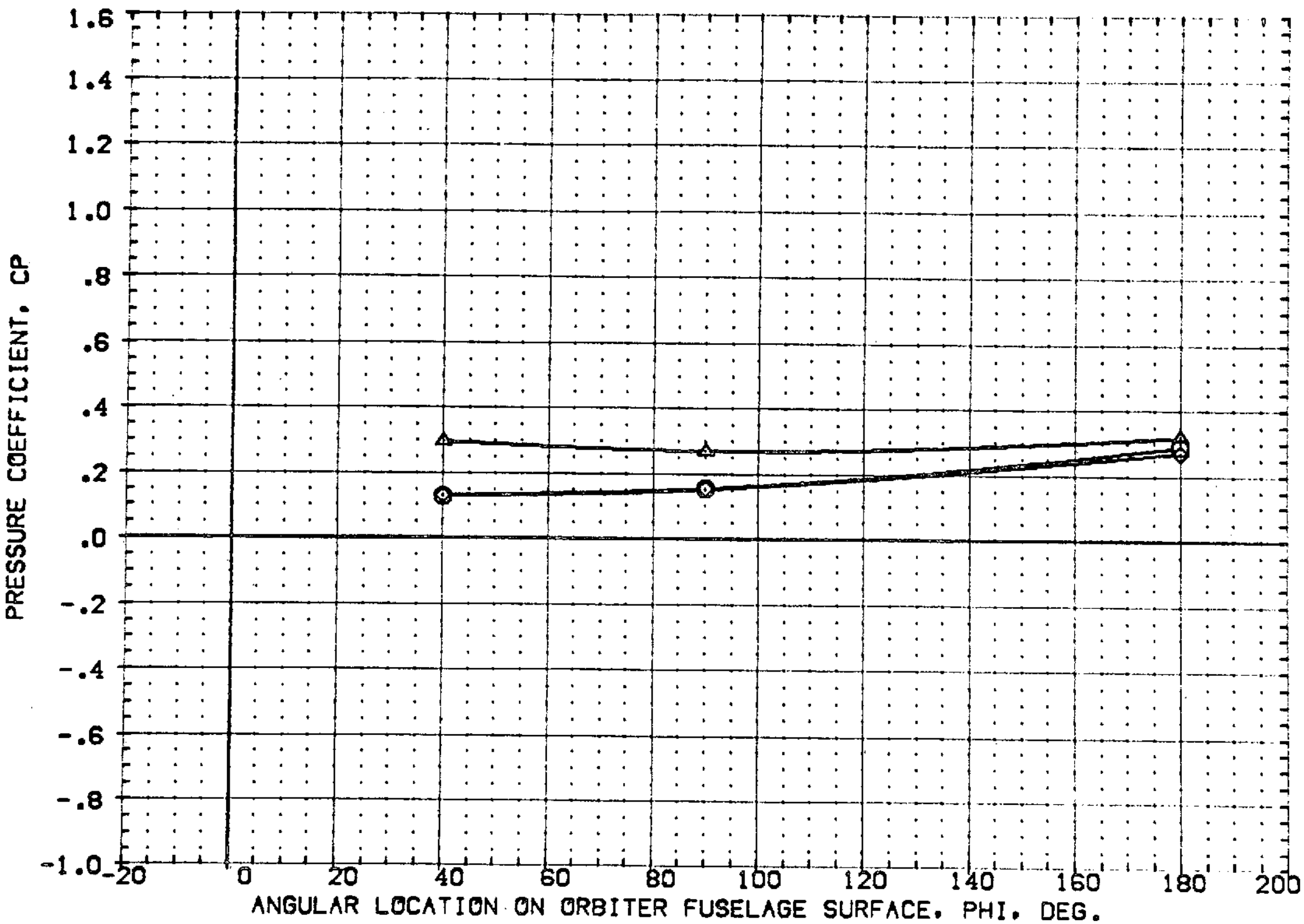


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/L = .295

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

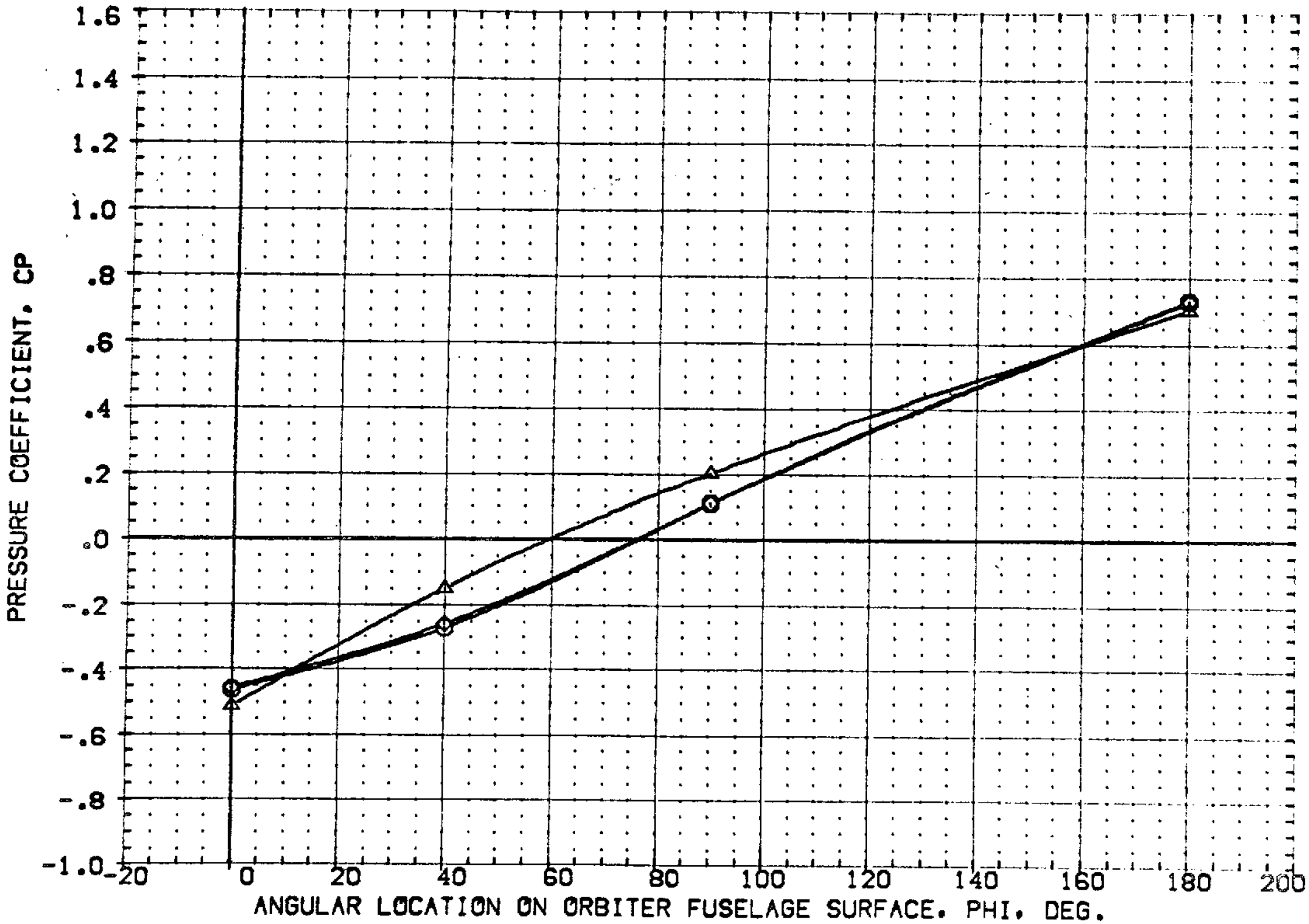


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/L = .349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F06)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	-4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F02)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	-4.000

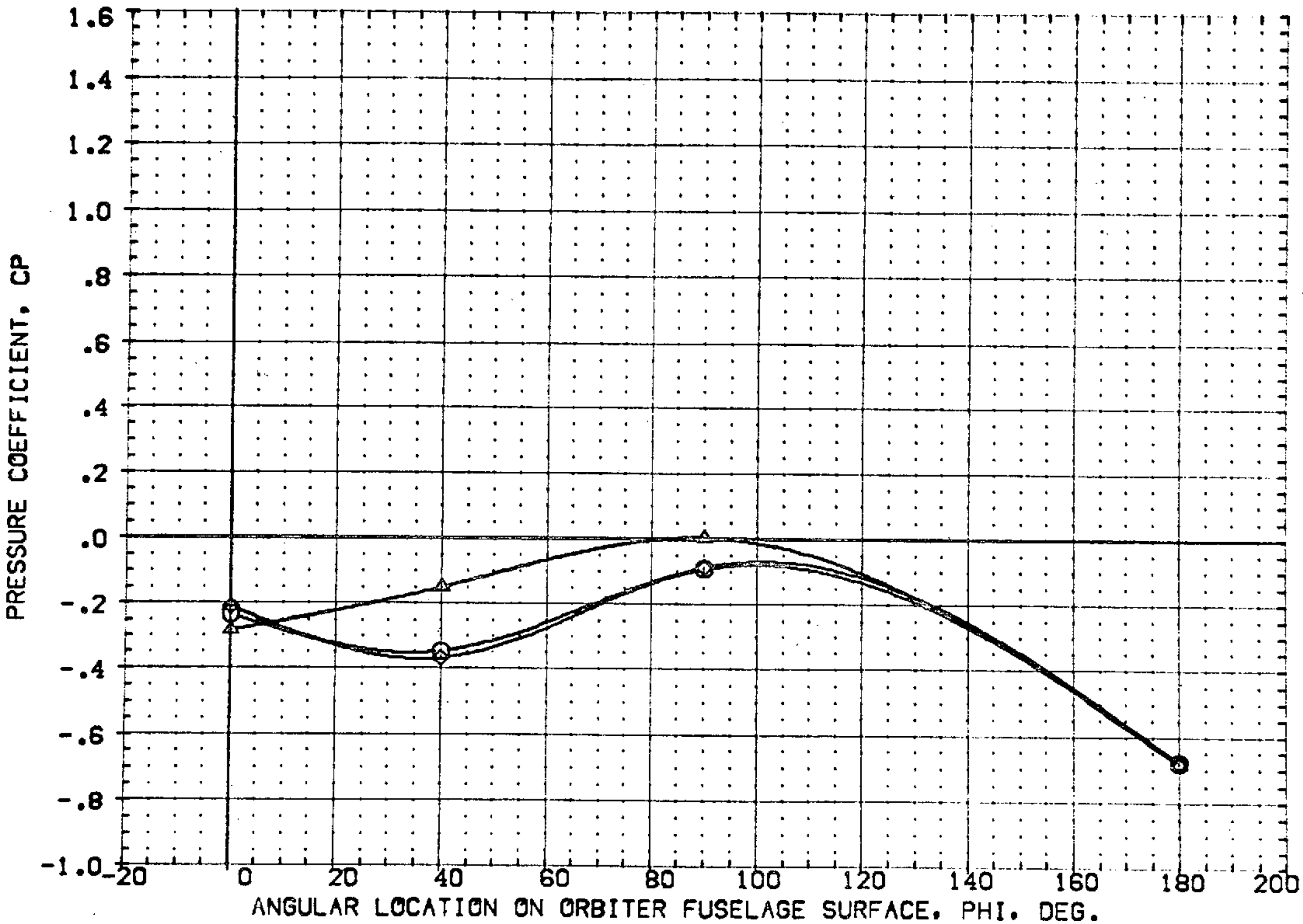


FIG 7 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, -4

MACH = 1.200 ALPHA = 4.000 X/L = .388

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3U05]	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
[RF3U04]	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
[RF3U01]	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
[RF3U03]	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

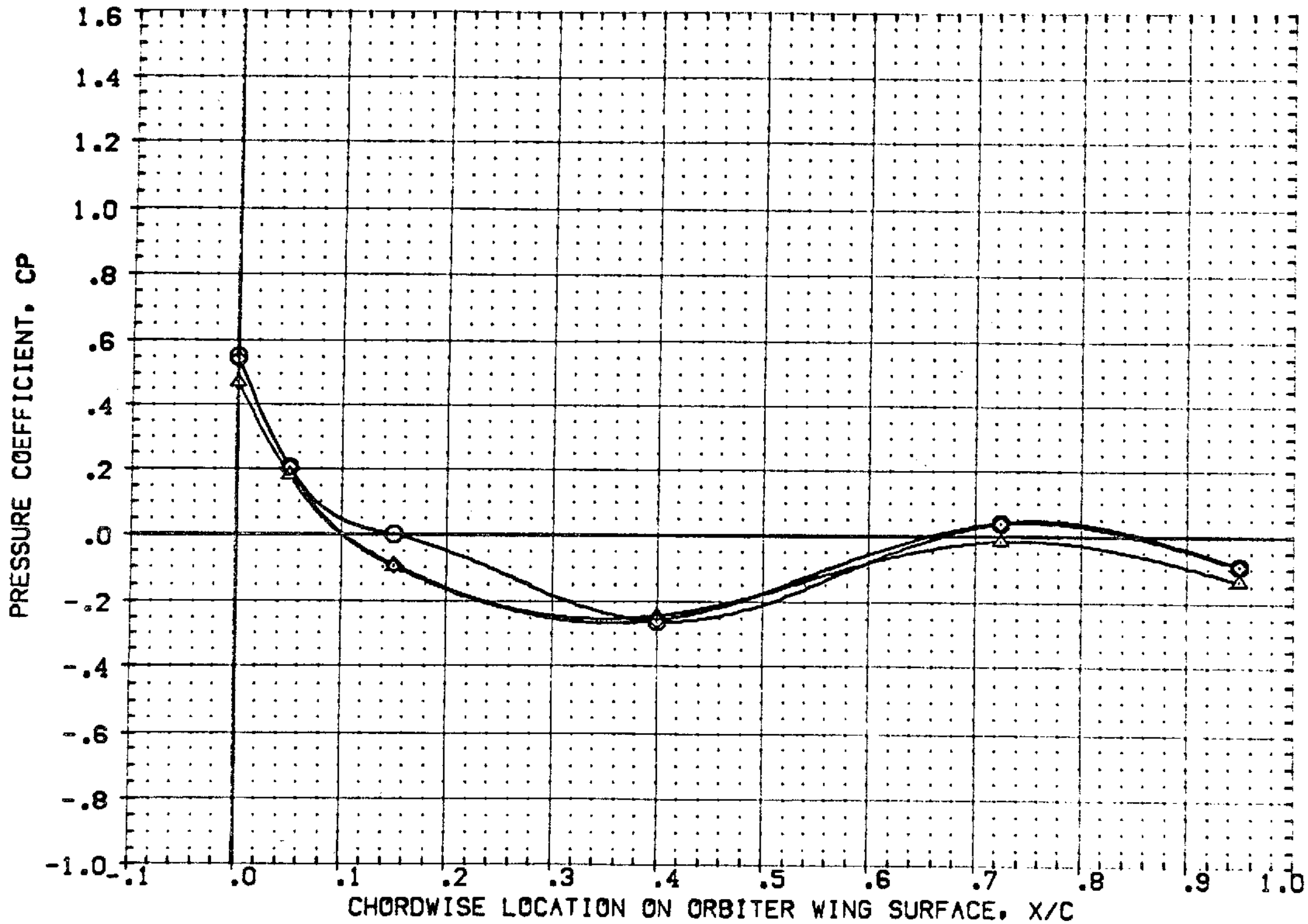


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

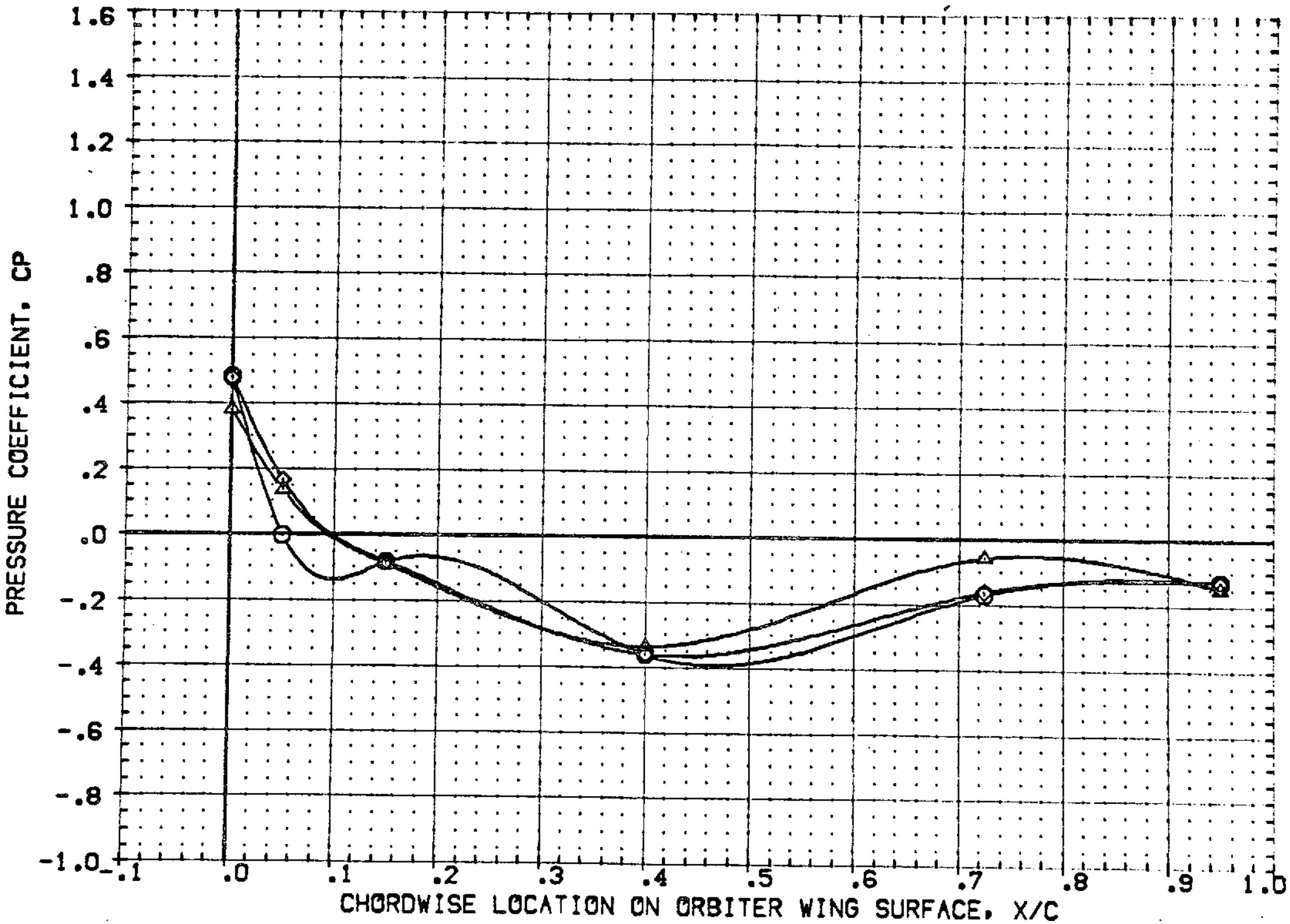


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

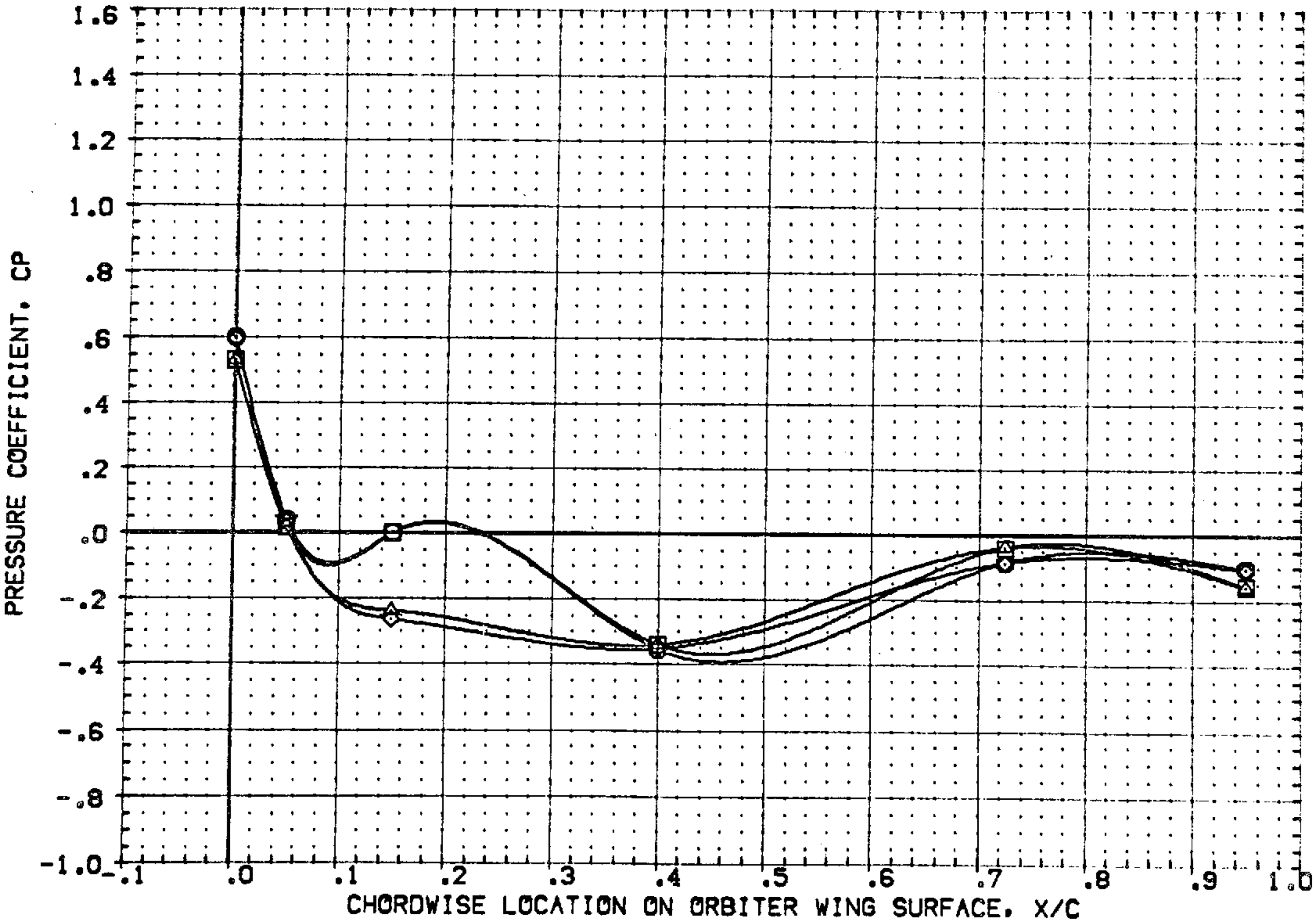


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 2Y/B = .534

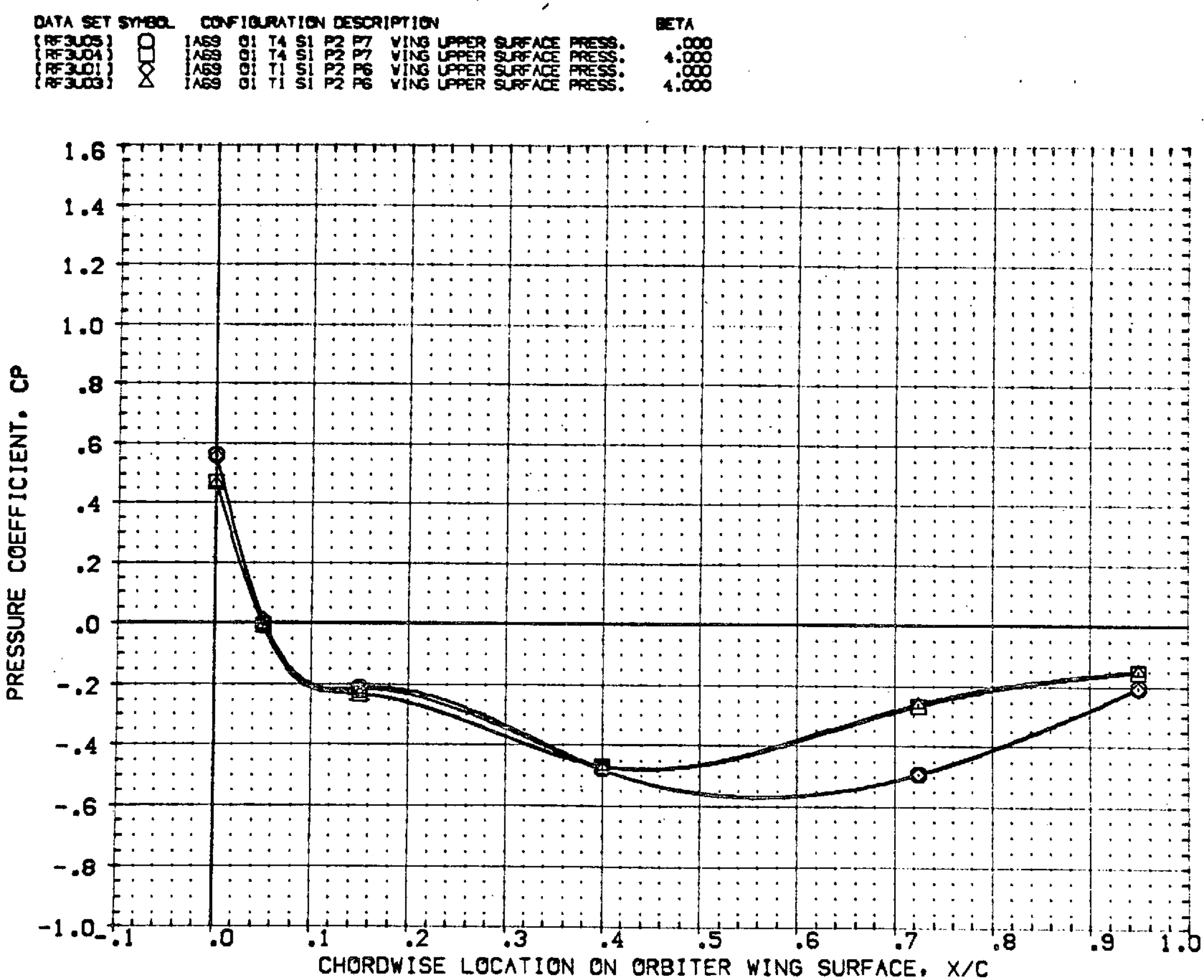


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

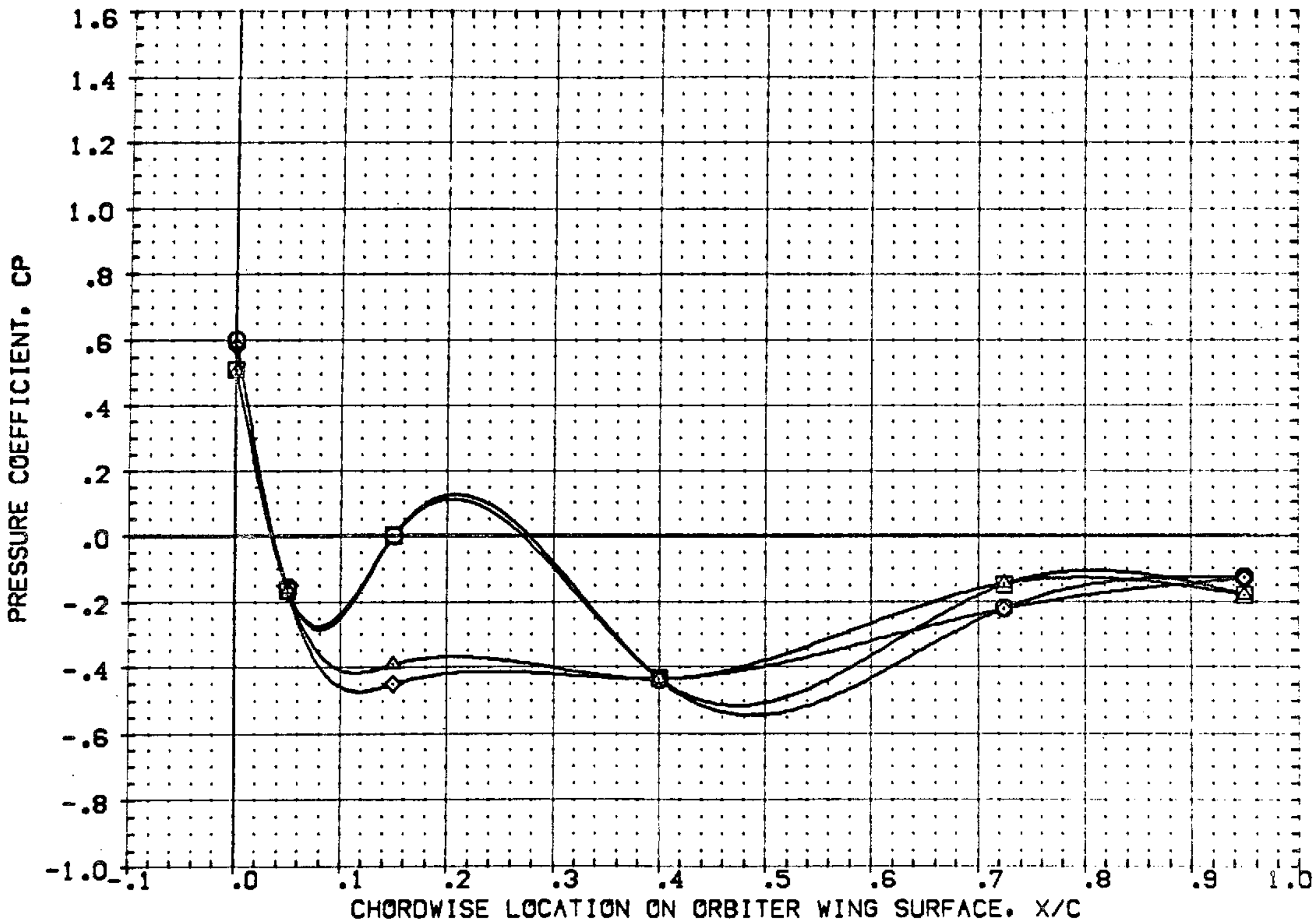


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

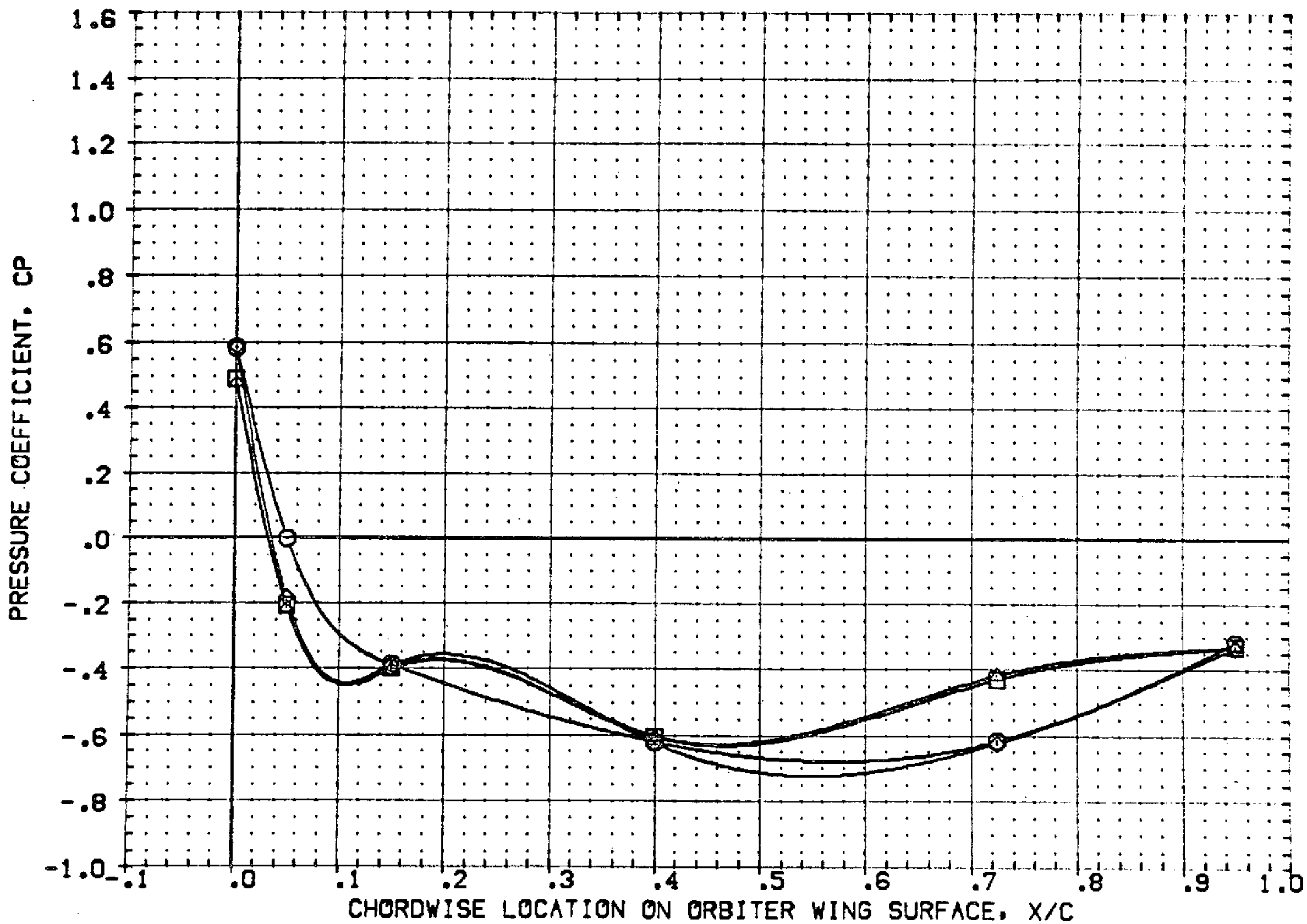


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

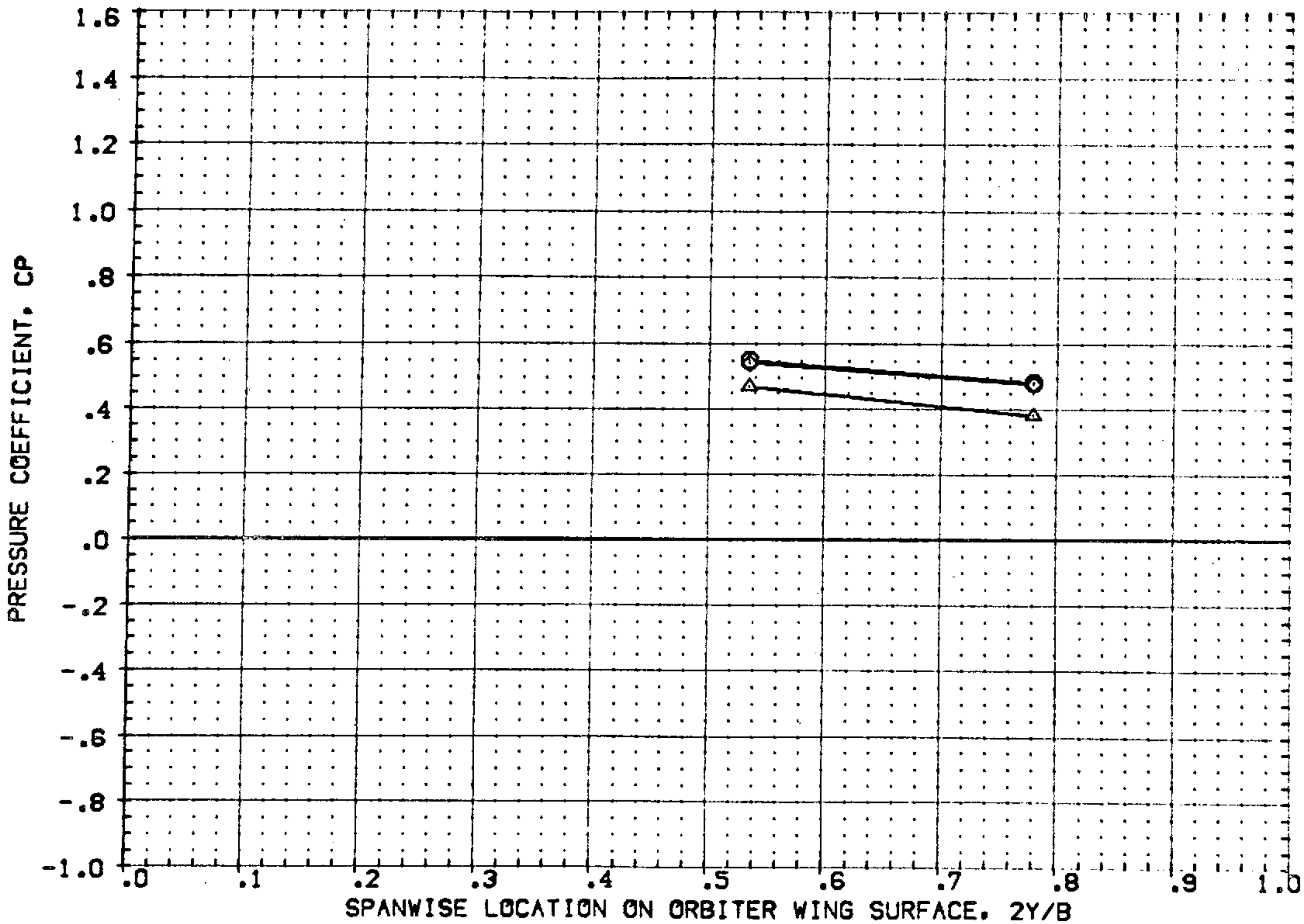


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

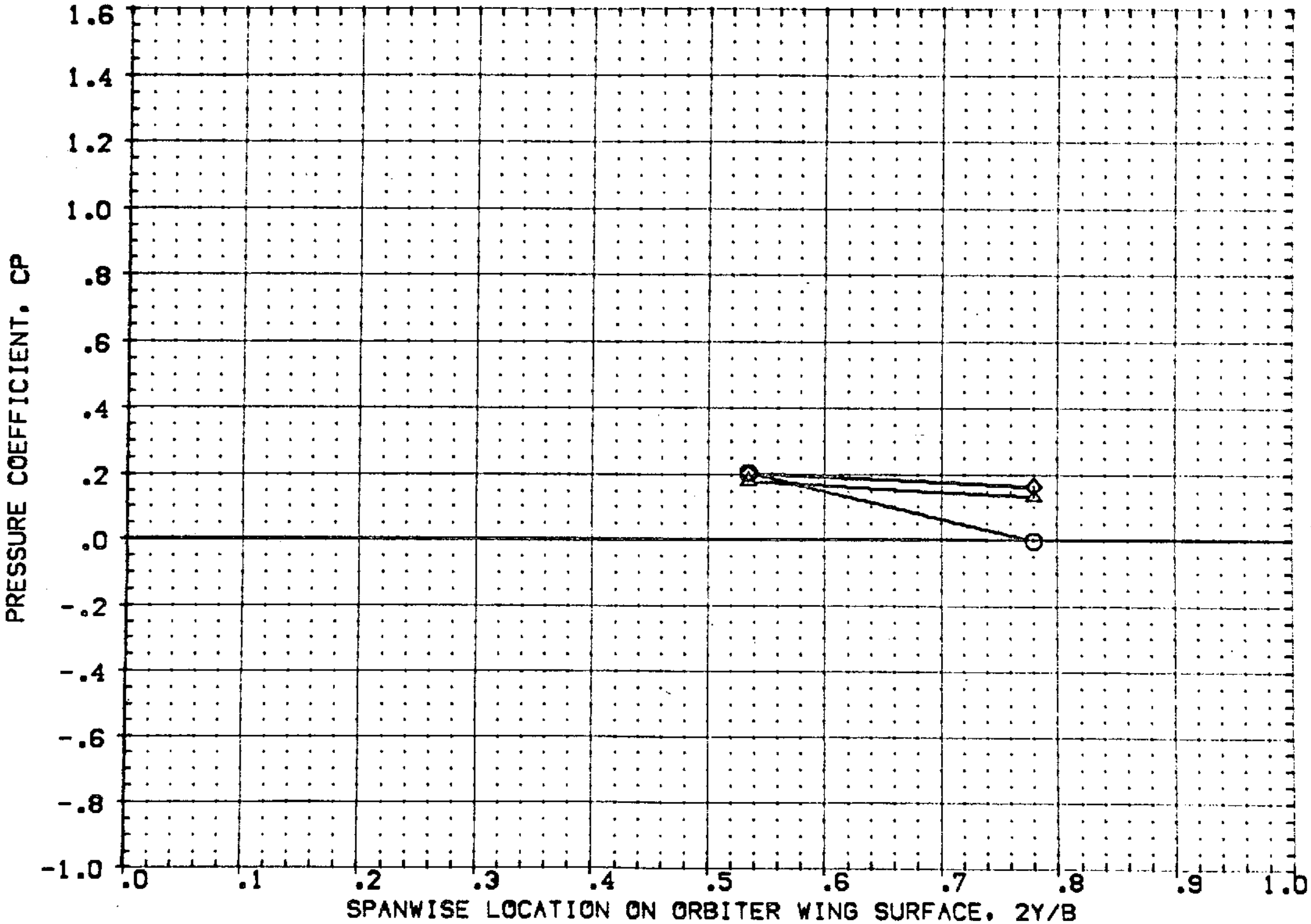


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

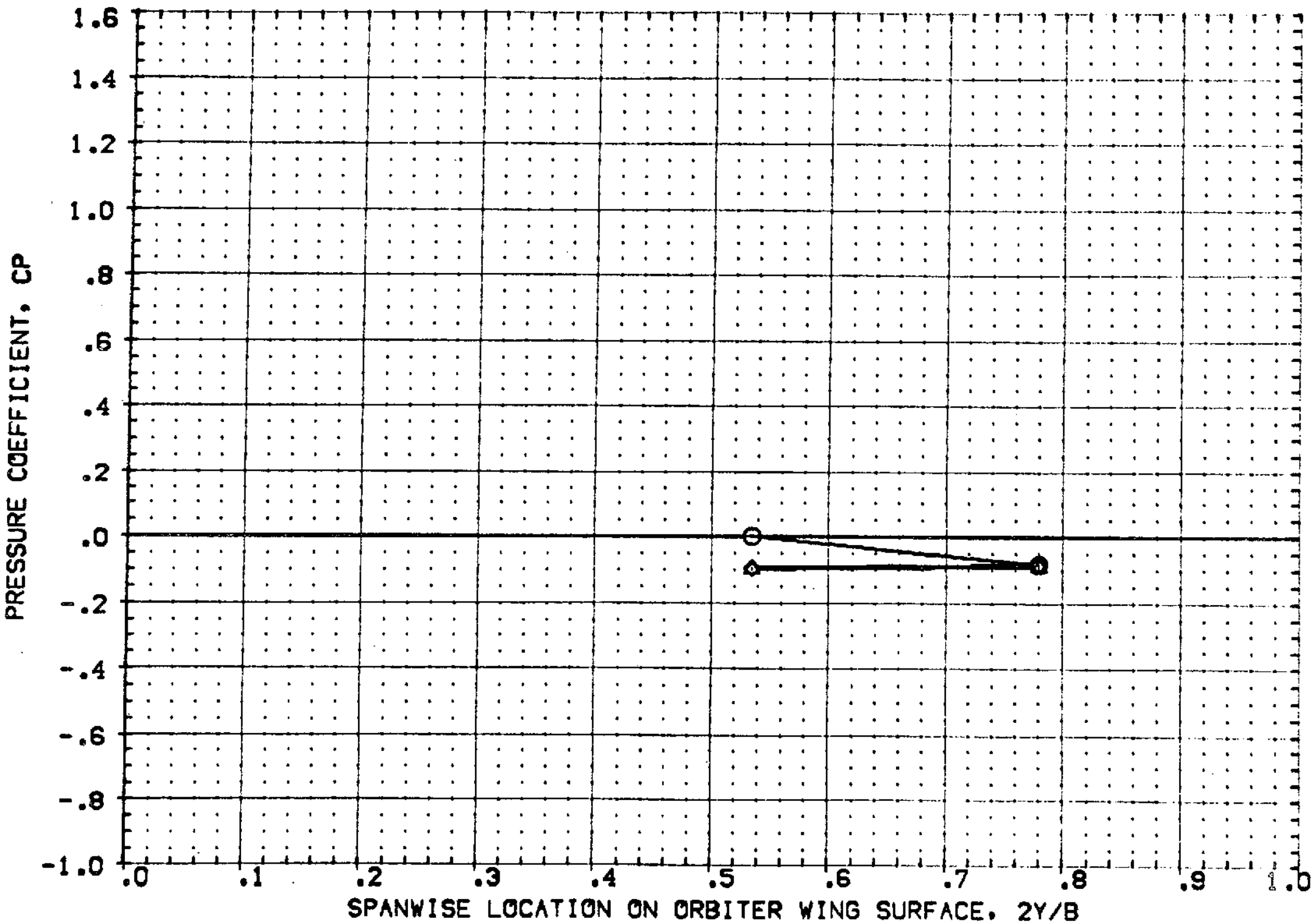


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

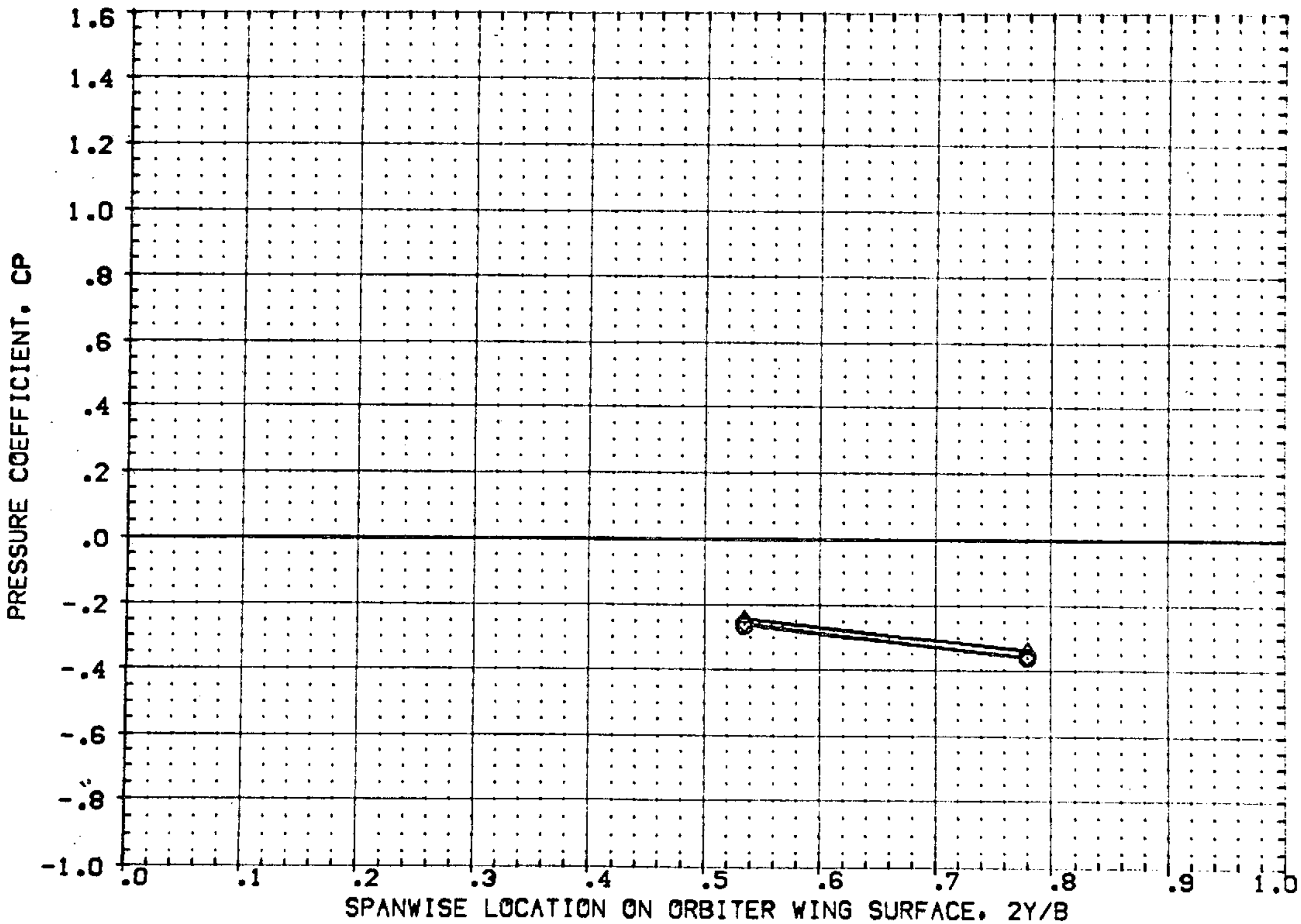


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

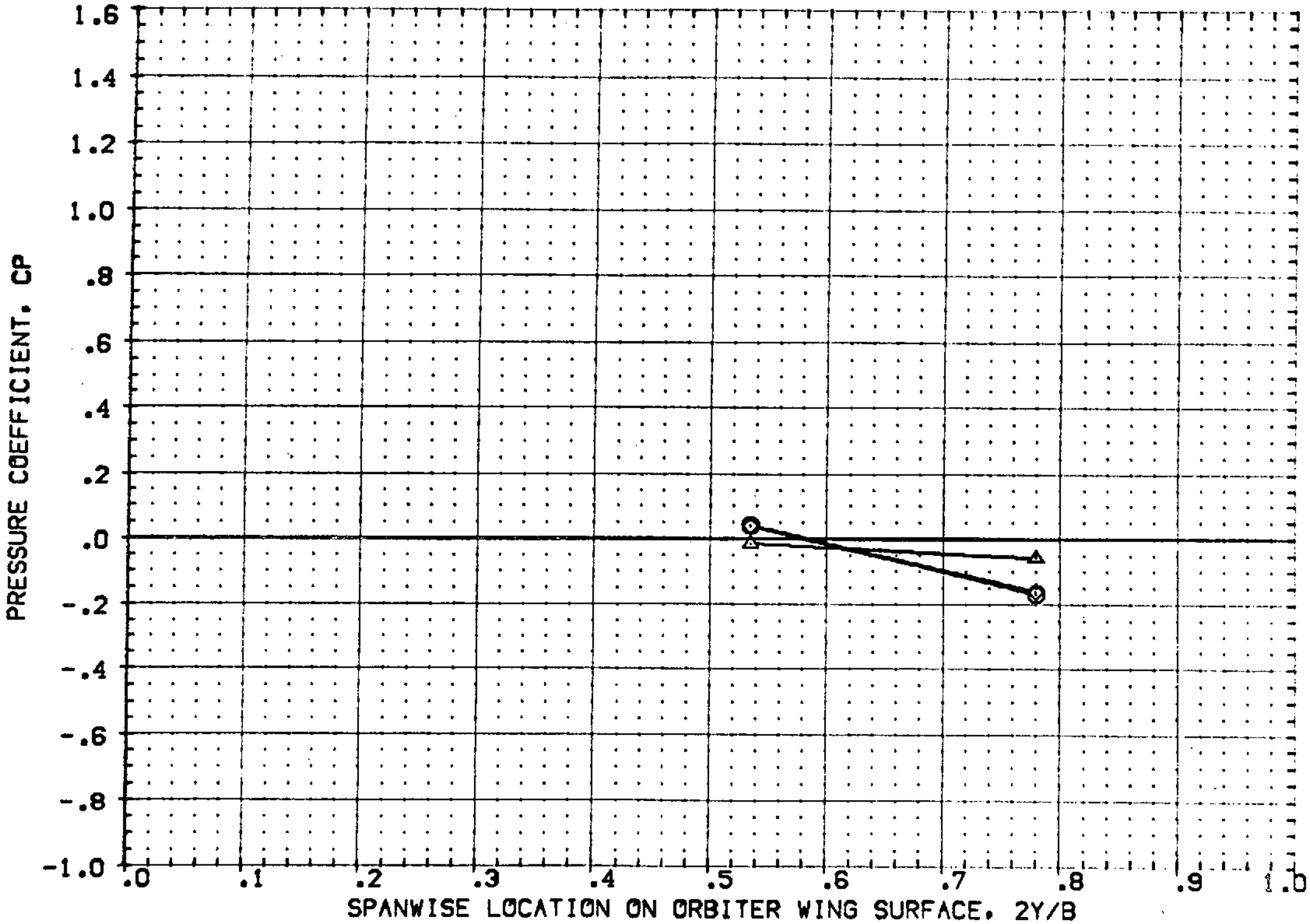


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

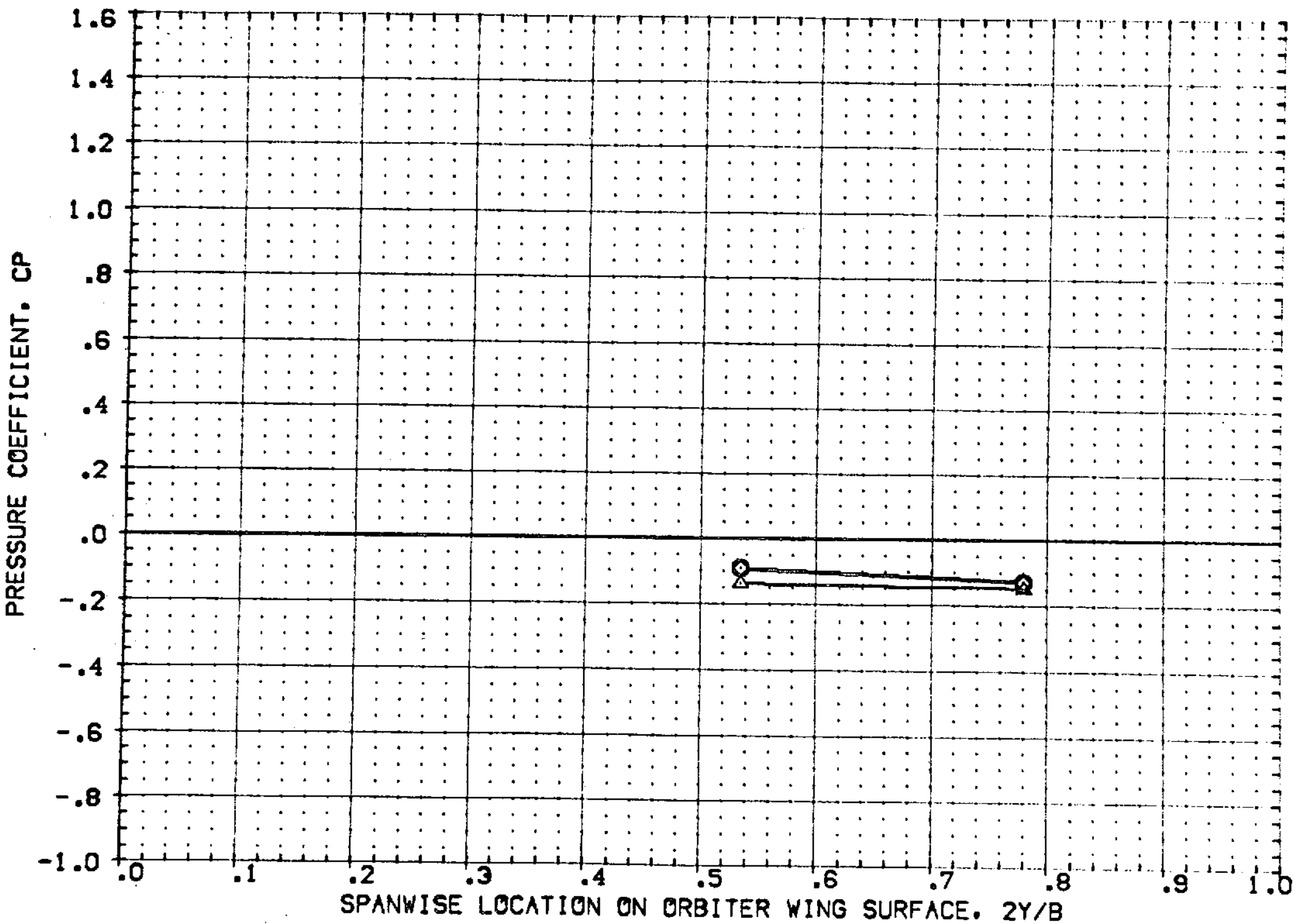


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

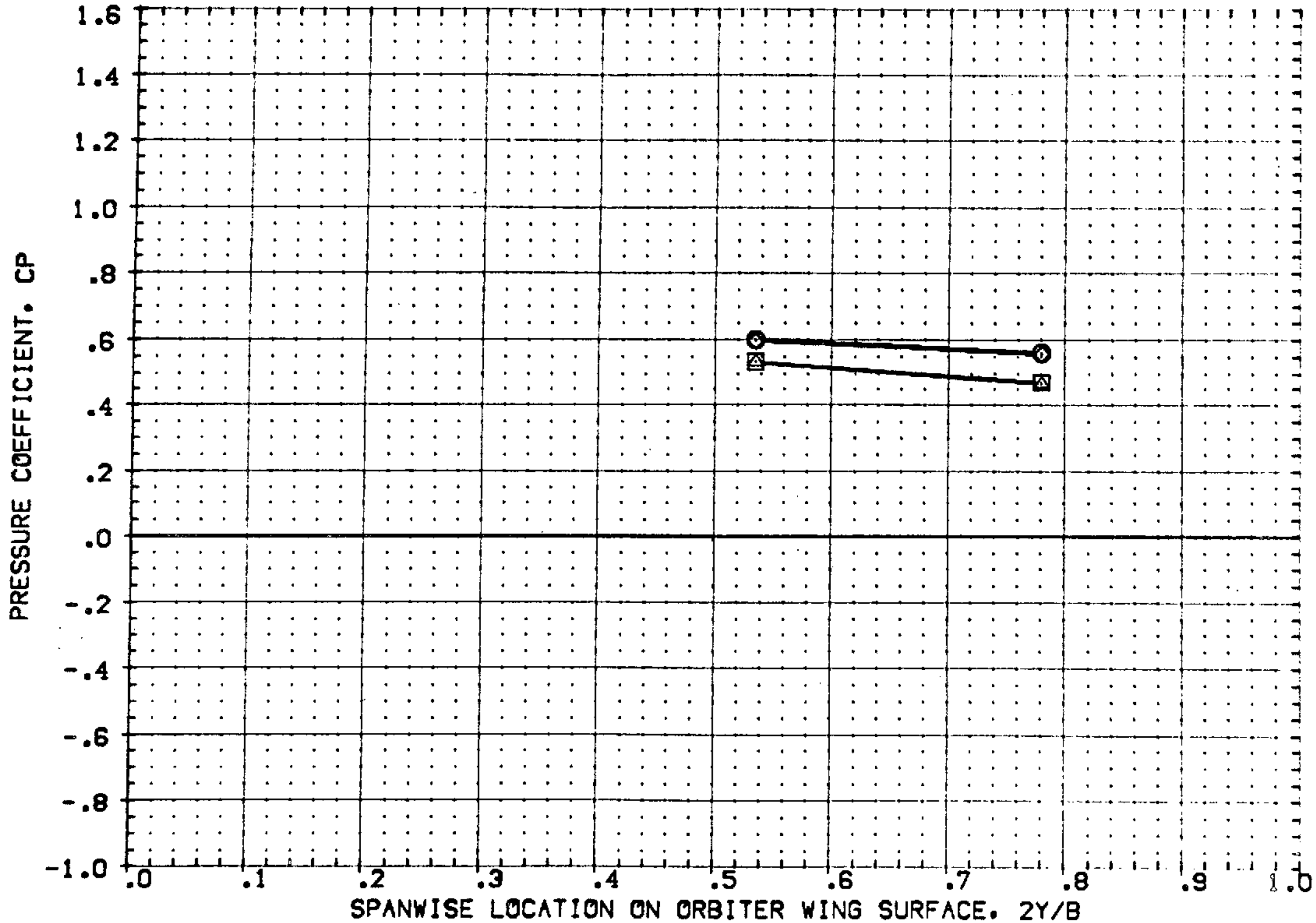


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

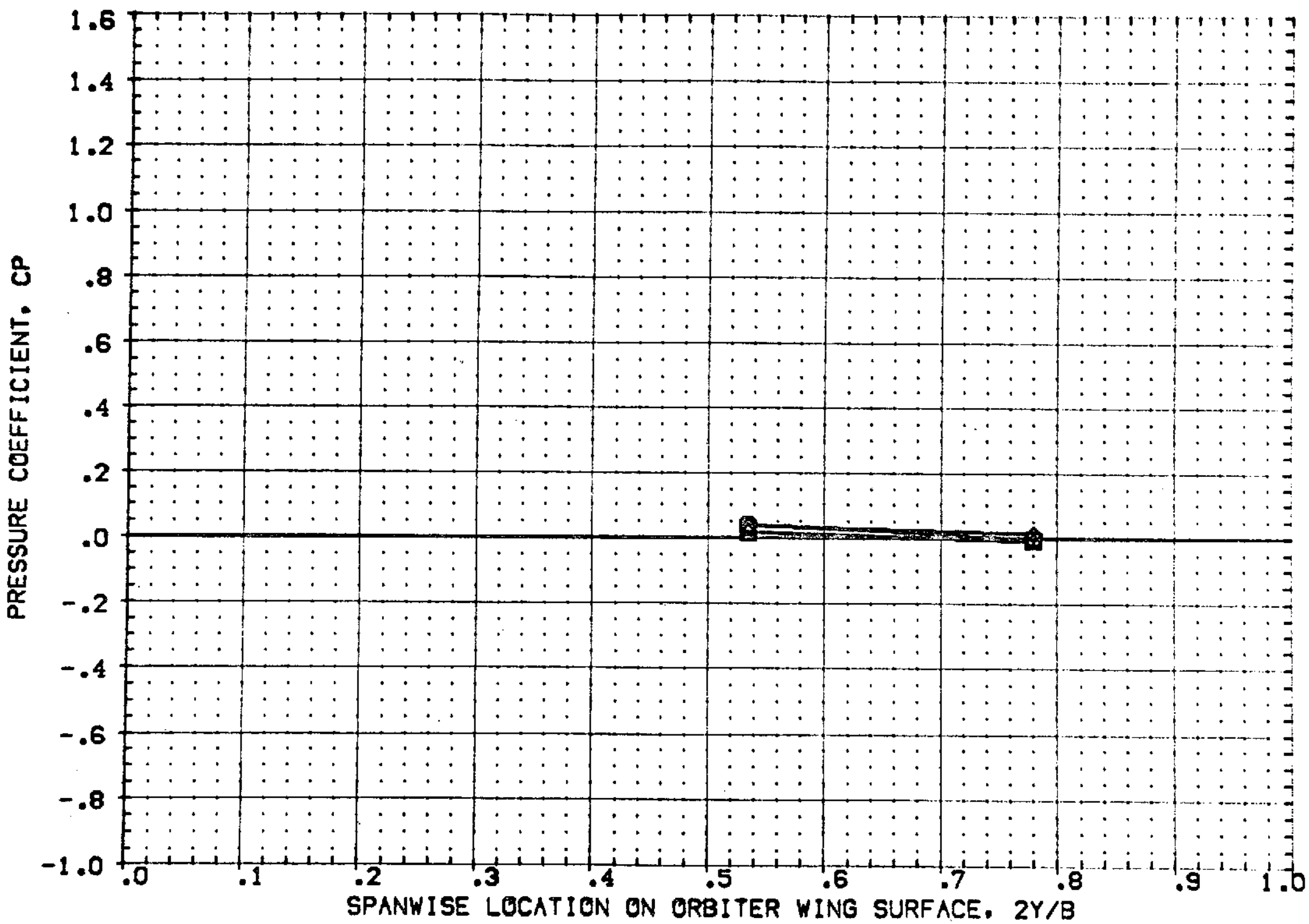


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .050

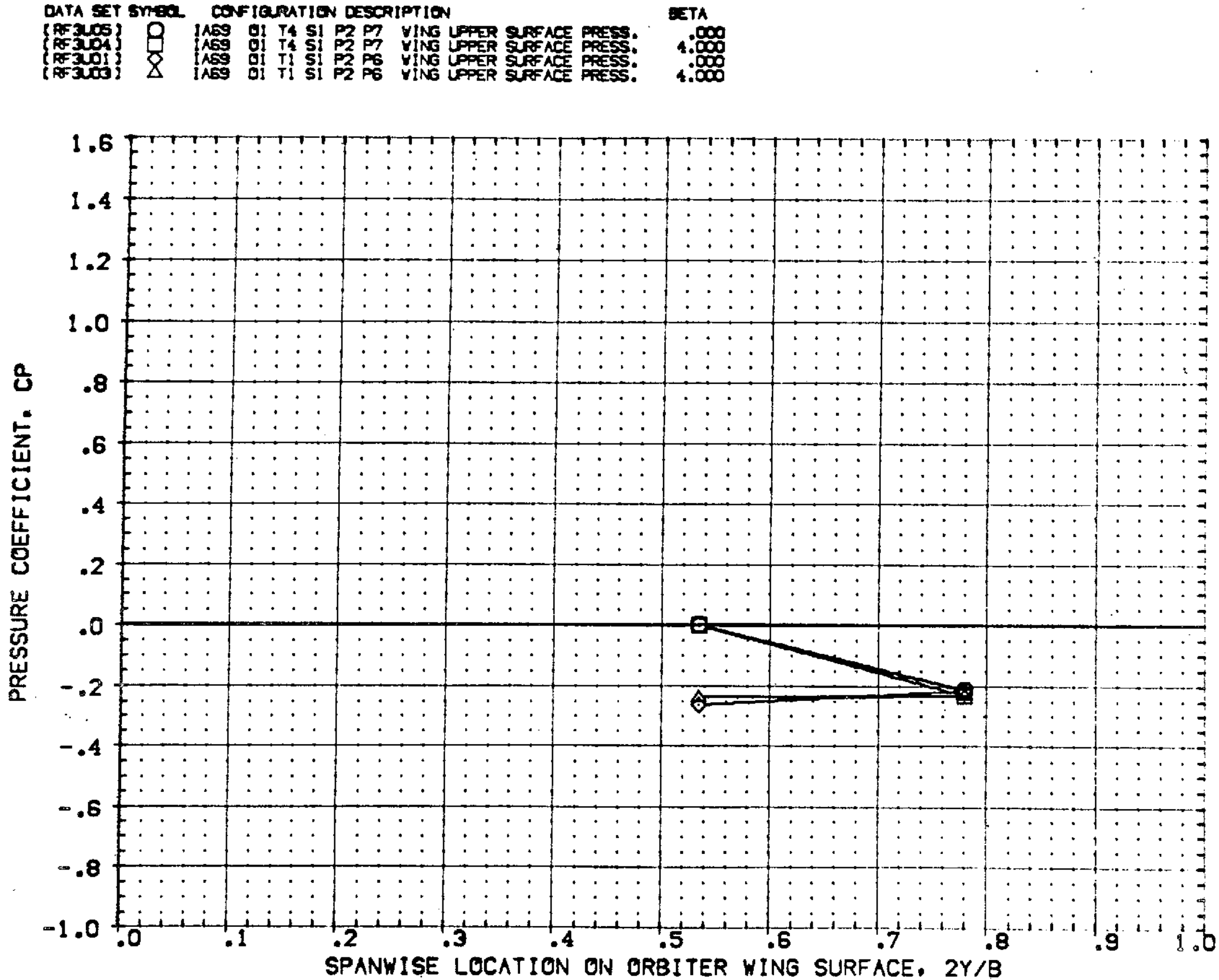


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .150

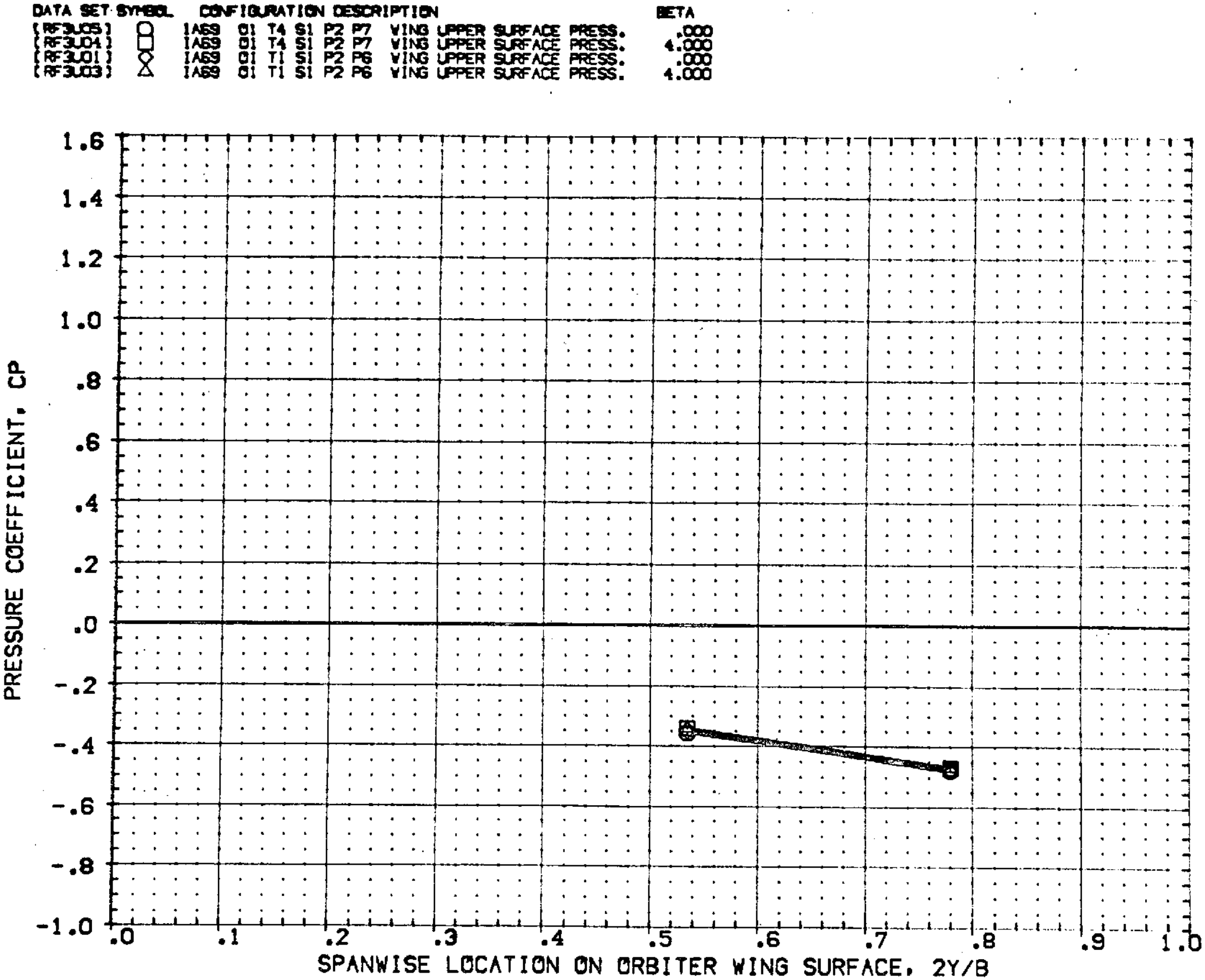


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

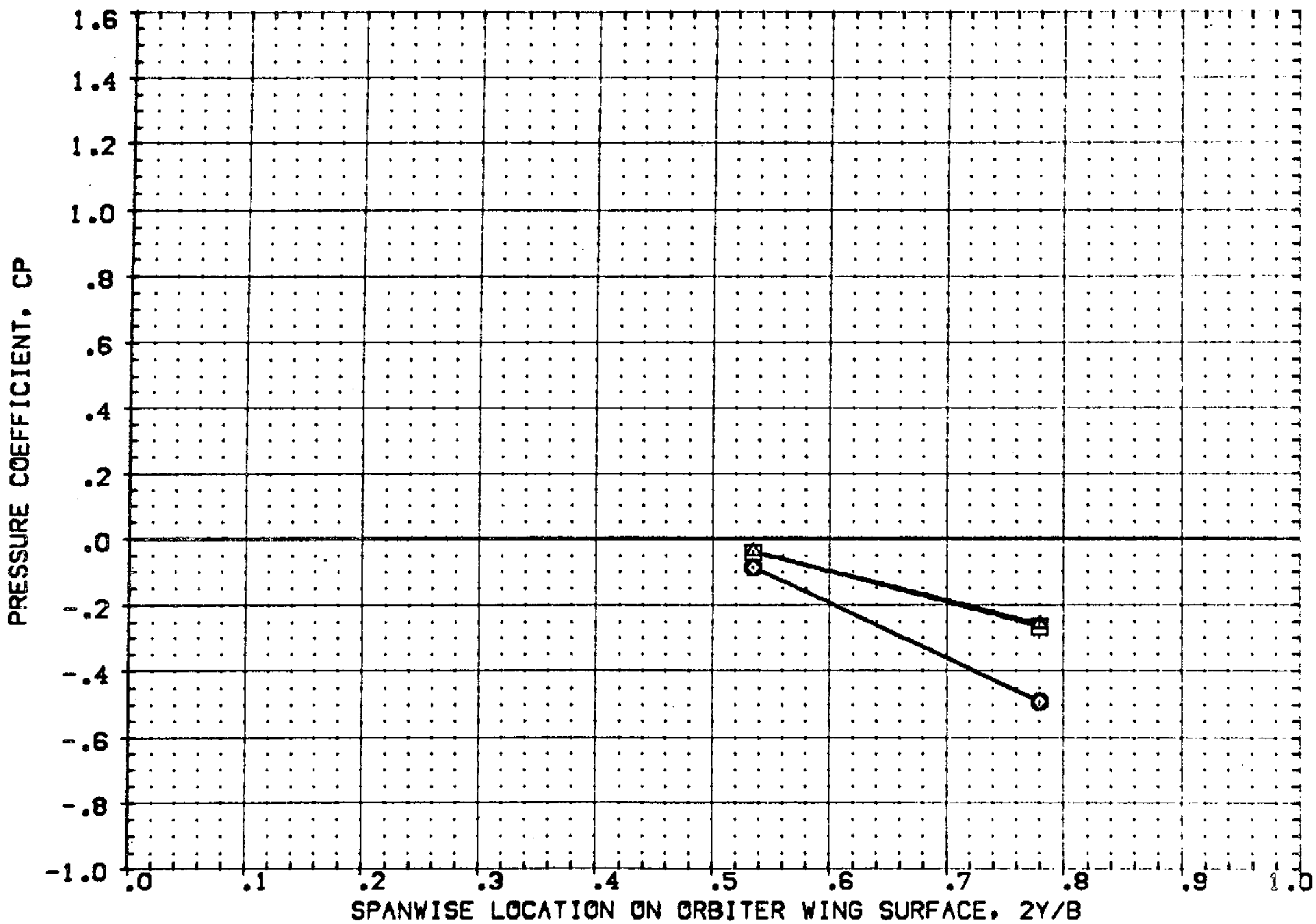


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

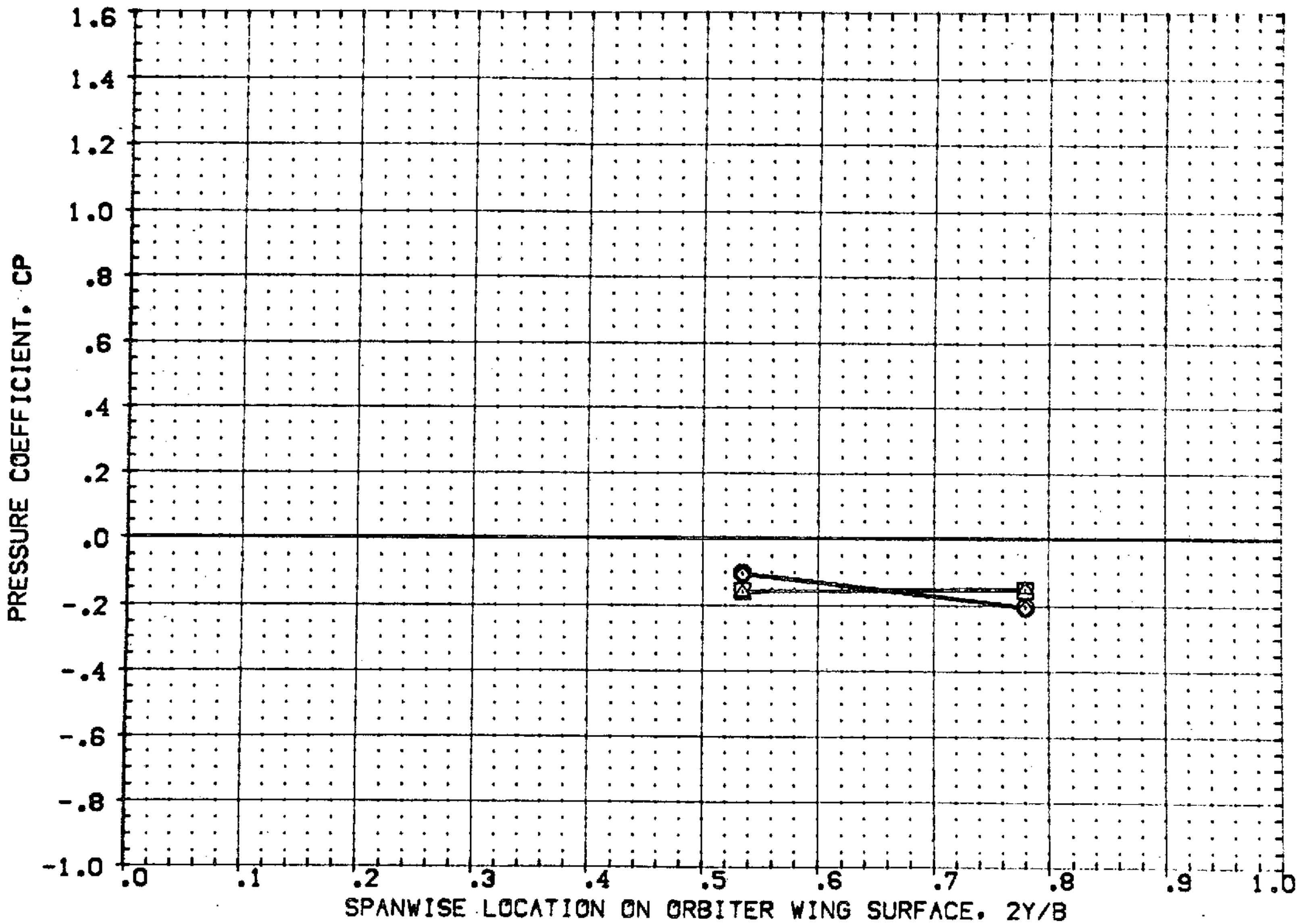


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .950

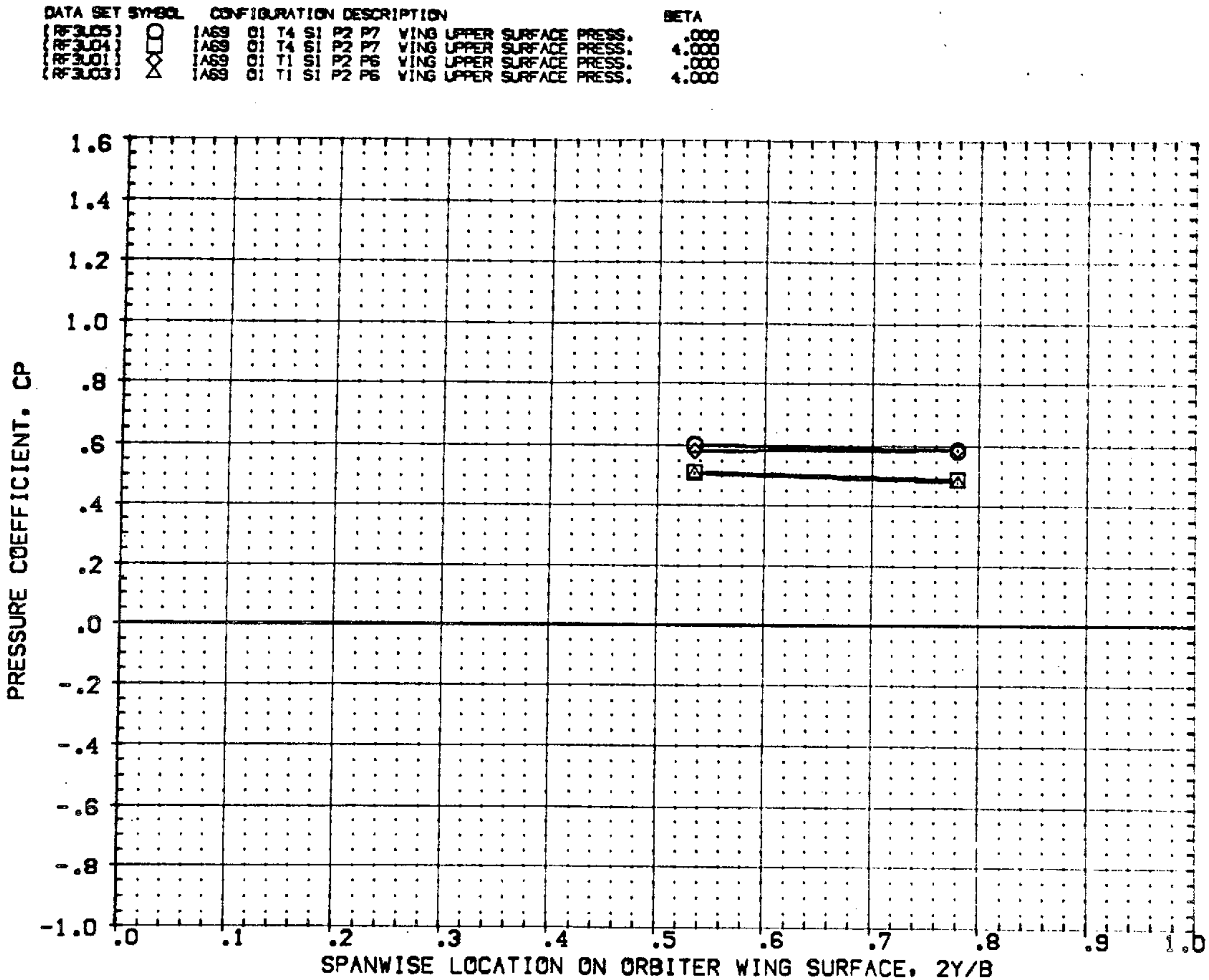


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 O1 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

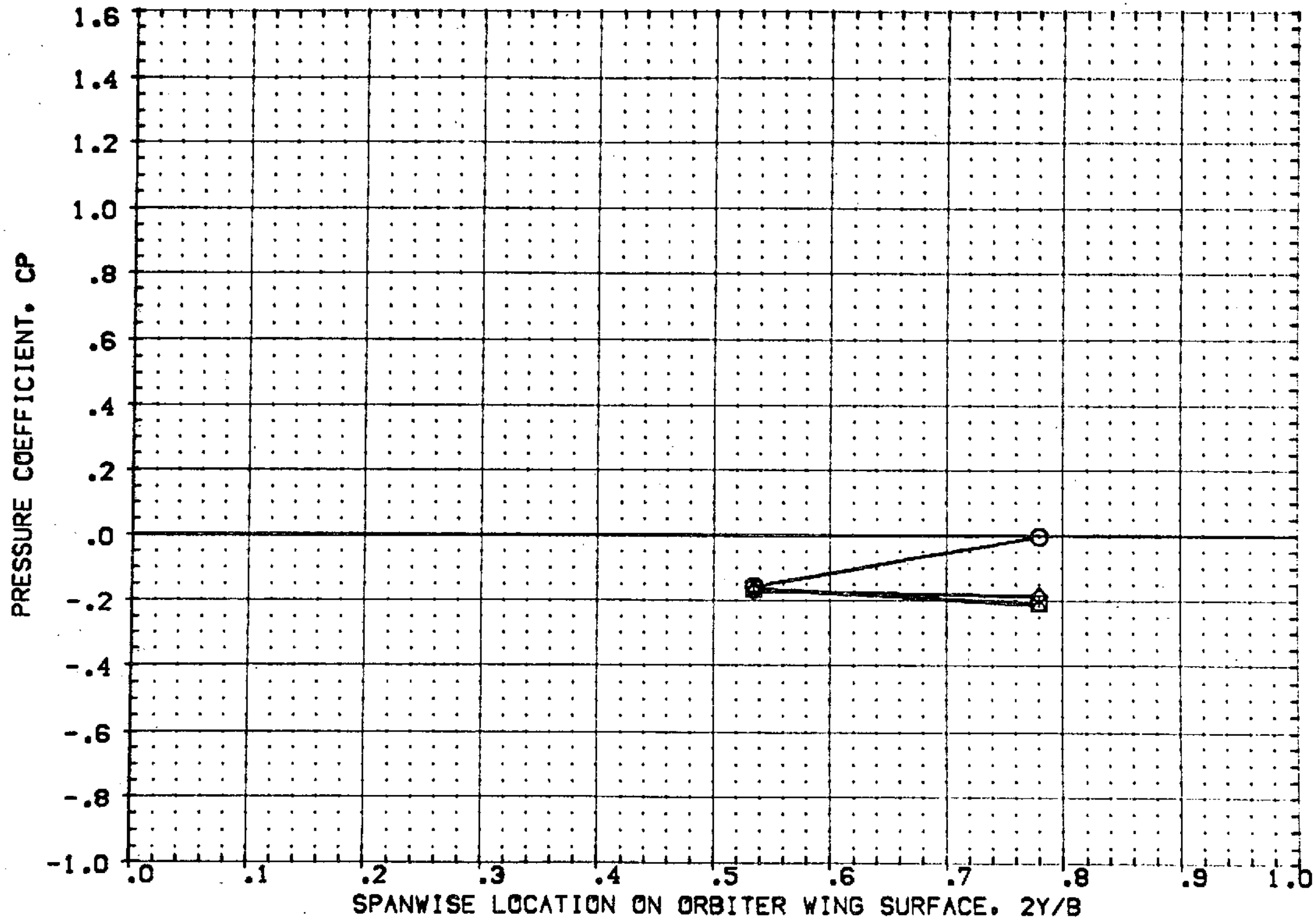


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .050

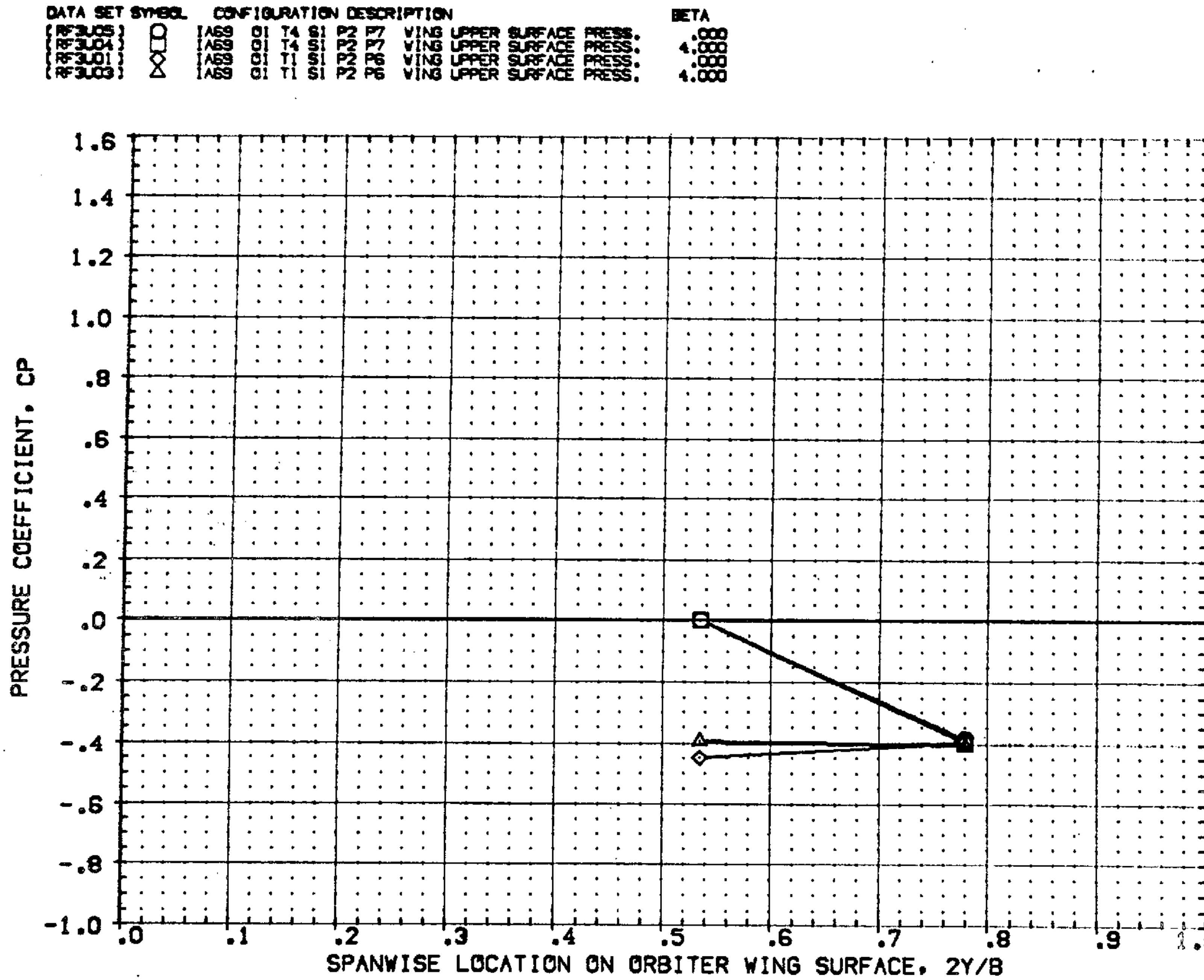


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .150

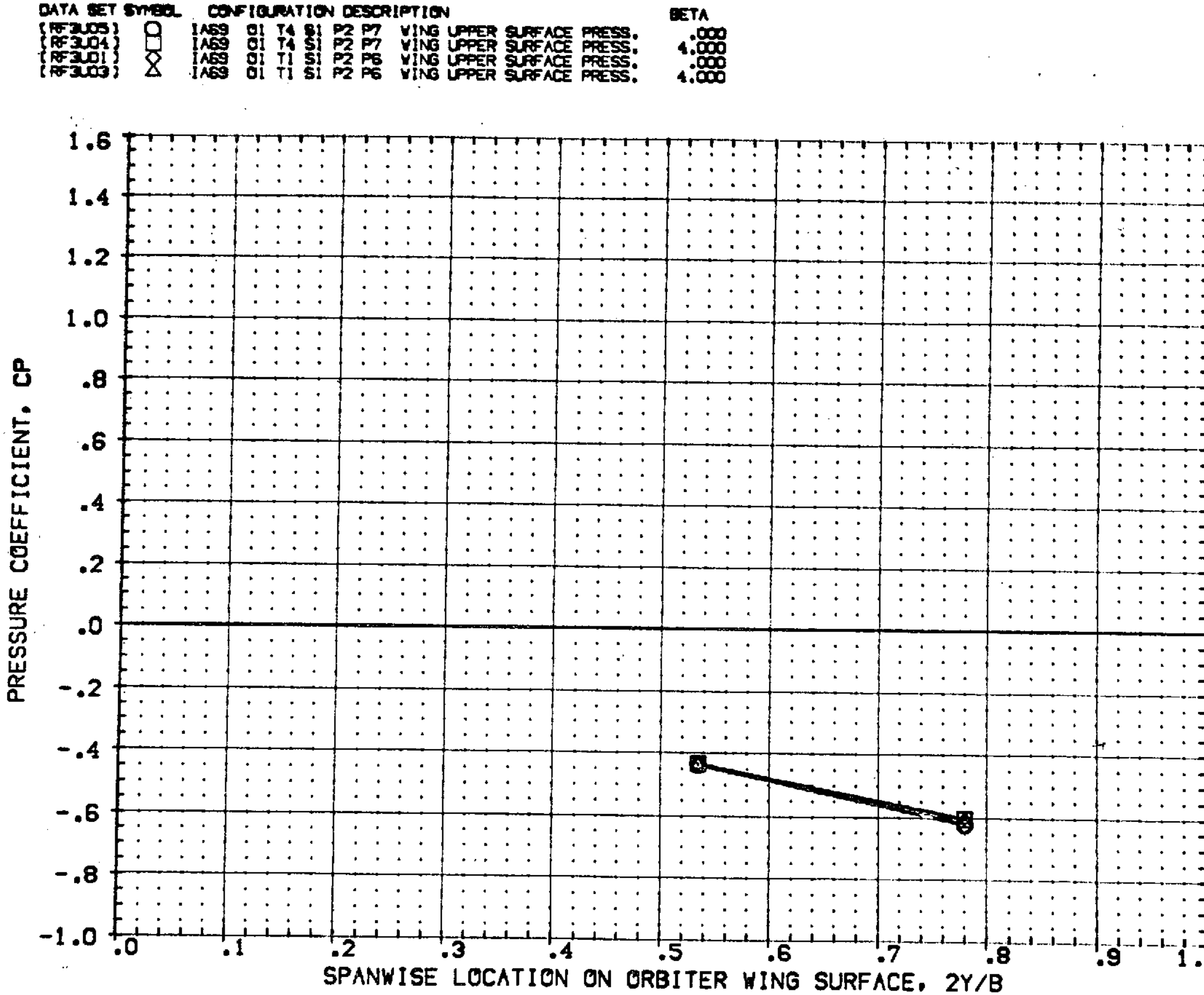


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

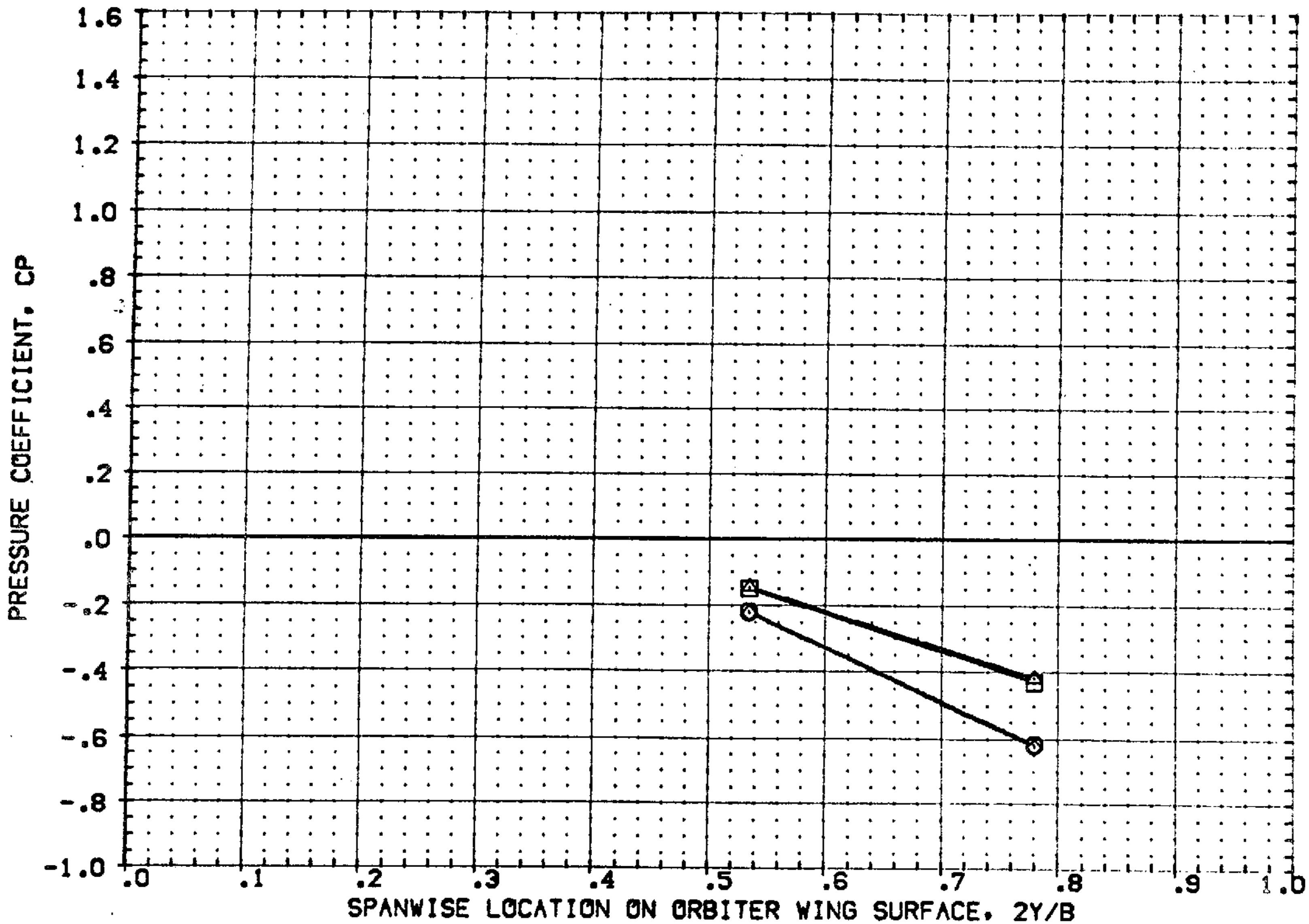


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3U05)	○	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	.000
(RF3U04)	□	IA69 01 T4 S1 P2 P7 WING UPPER SURFACE PRESS.	4.000
(RF3U01)	◇	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.000
(RF3U03)	△	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	4.000

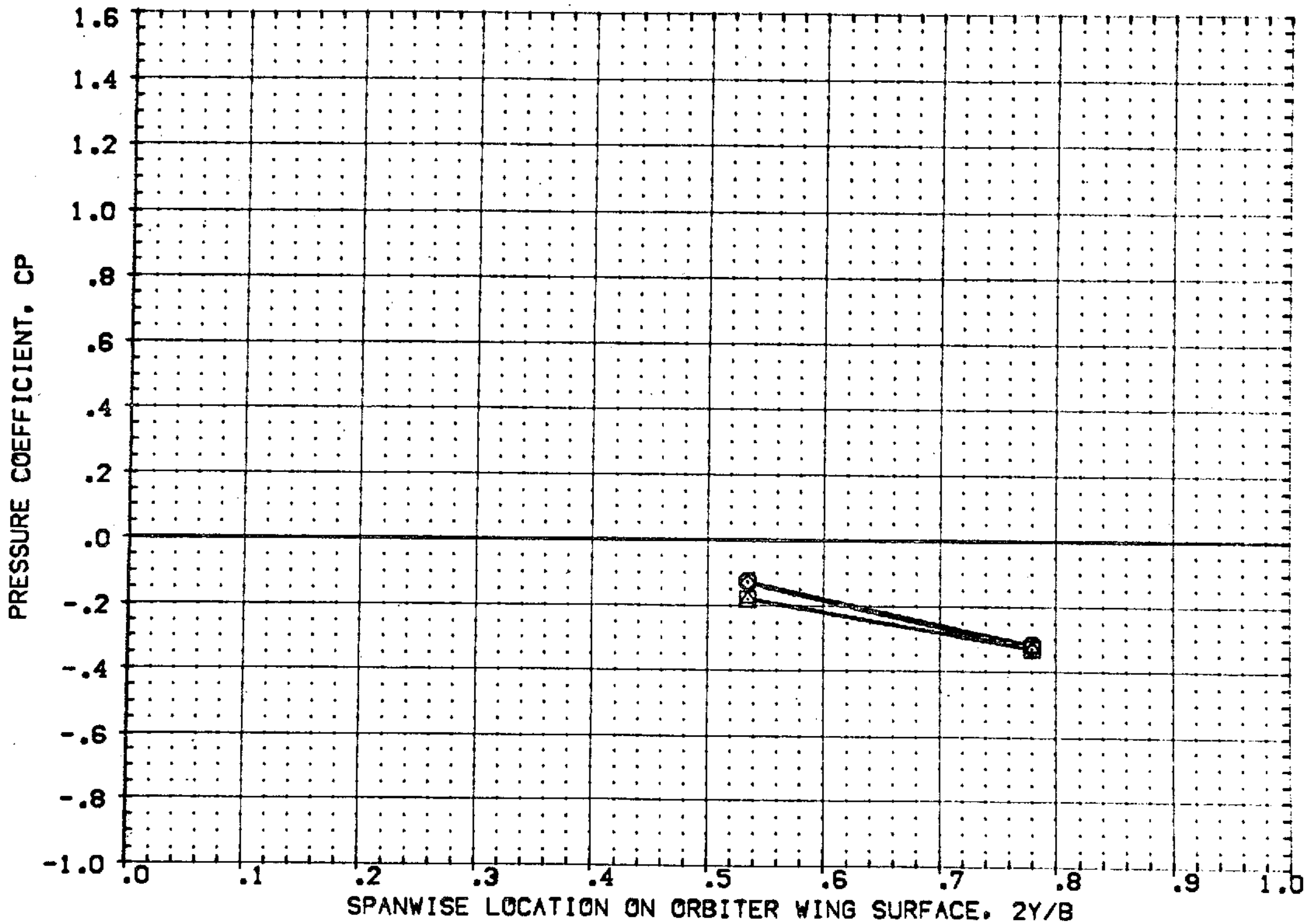


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

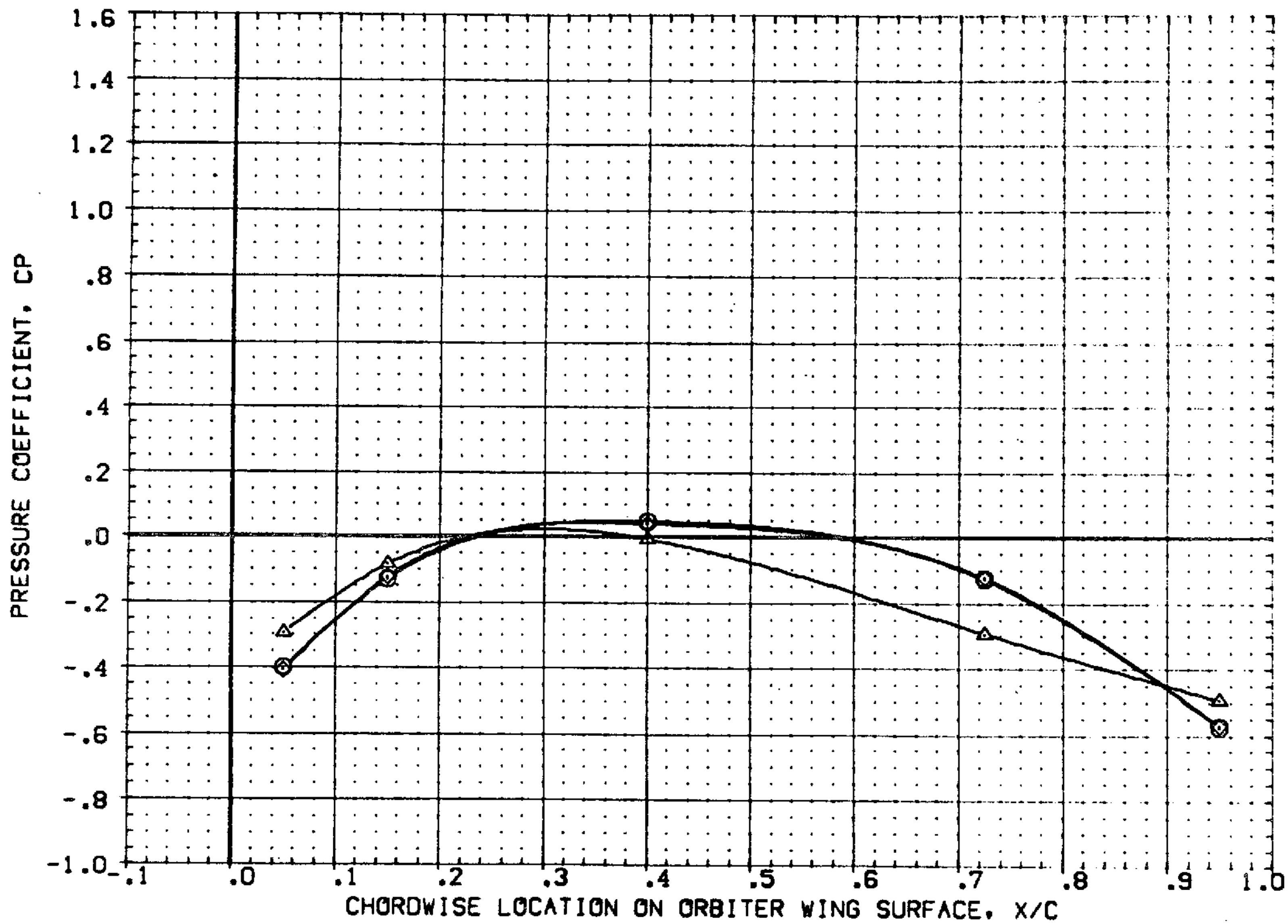


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 2Y/B = .534 PAGE 100

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

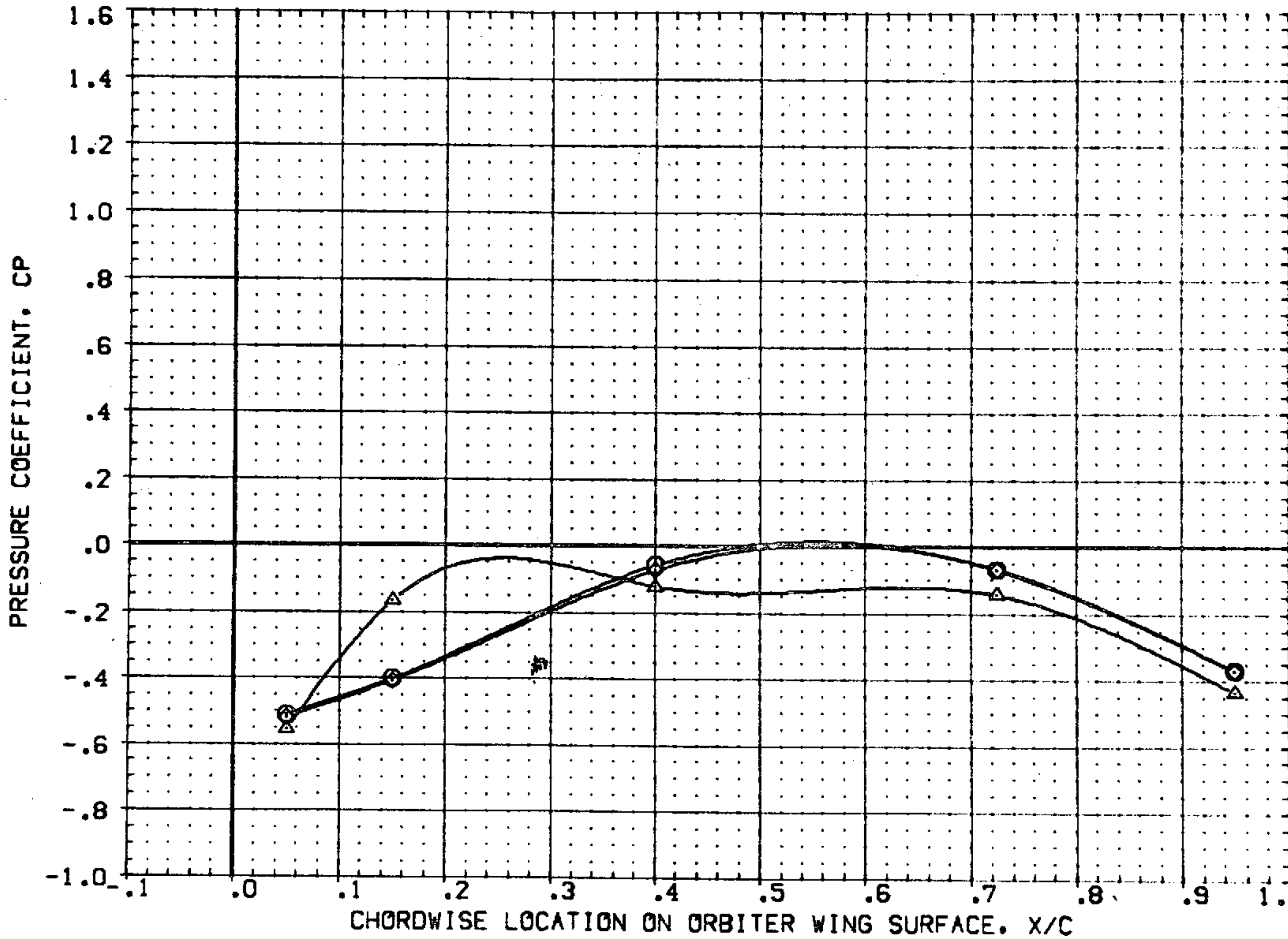


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

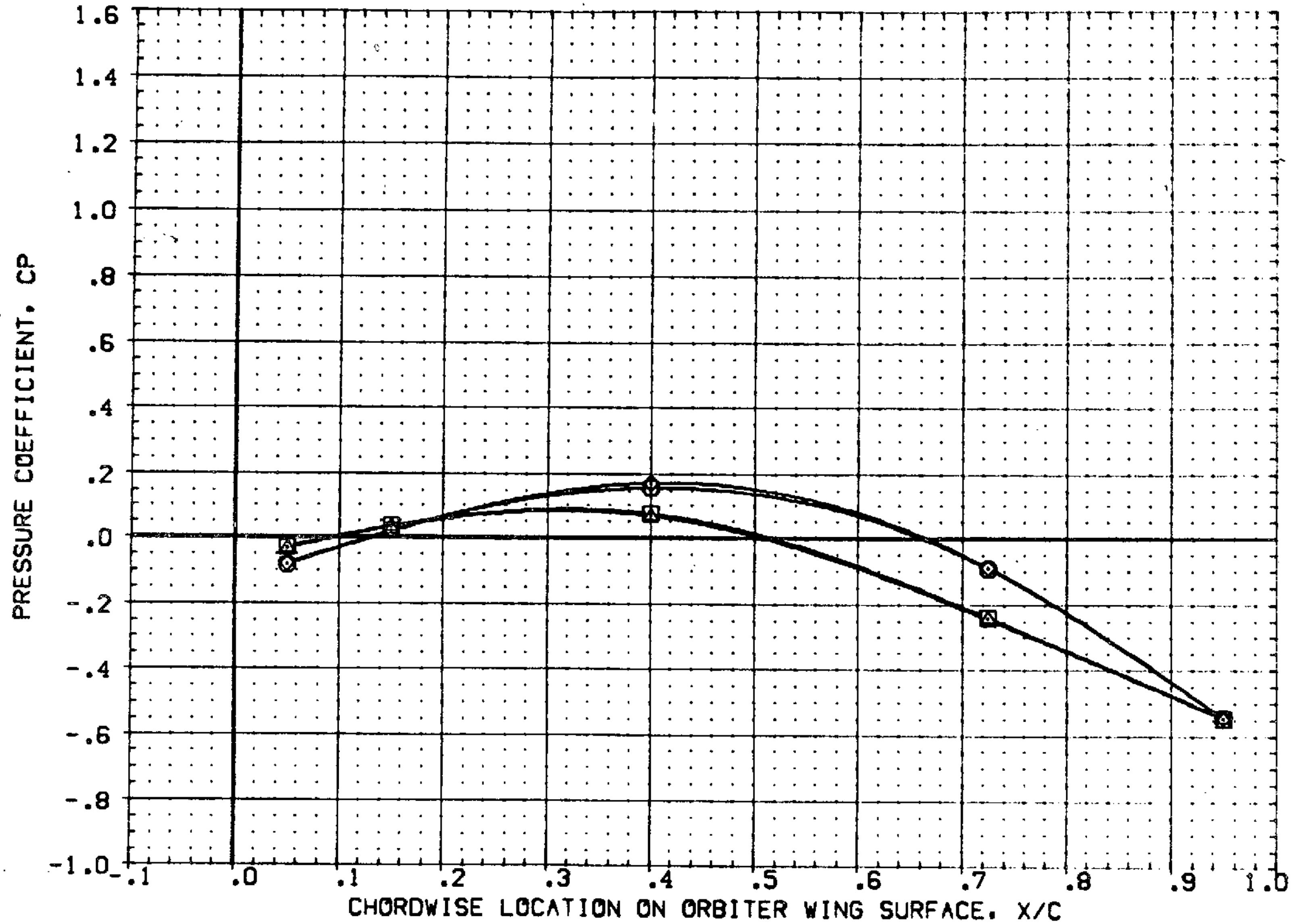


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

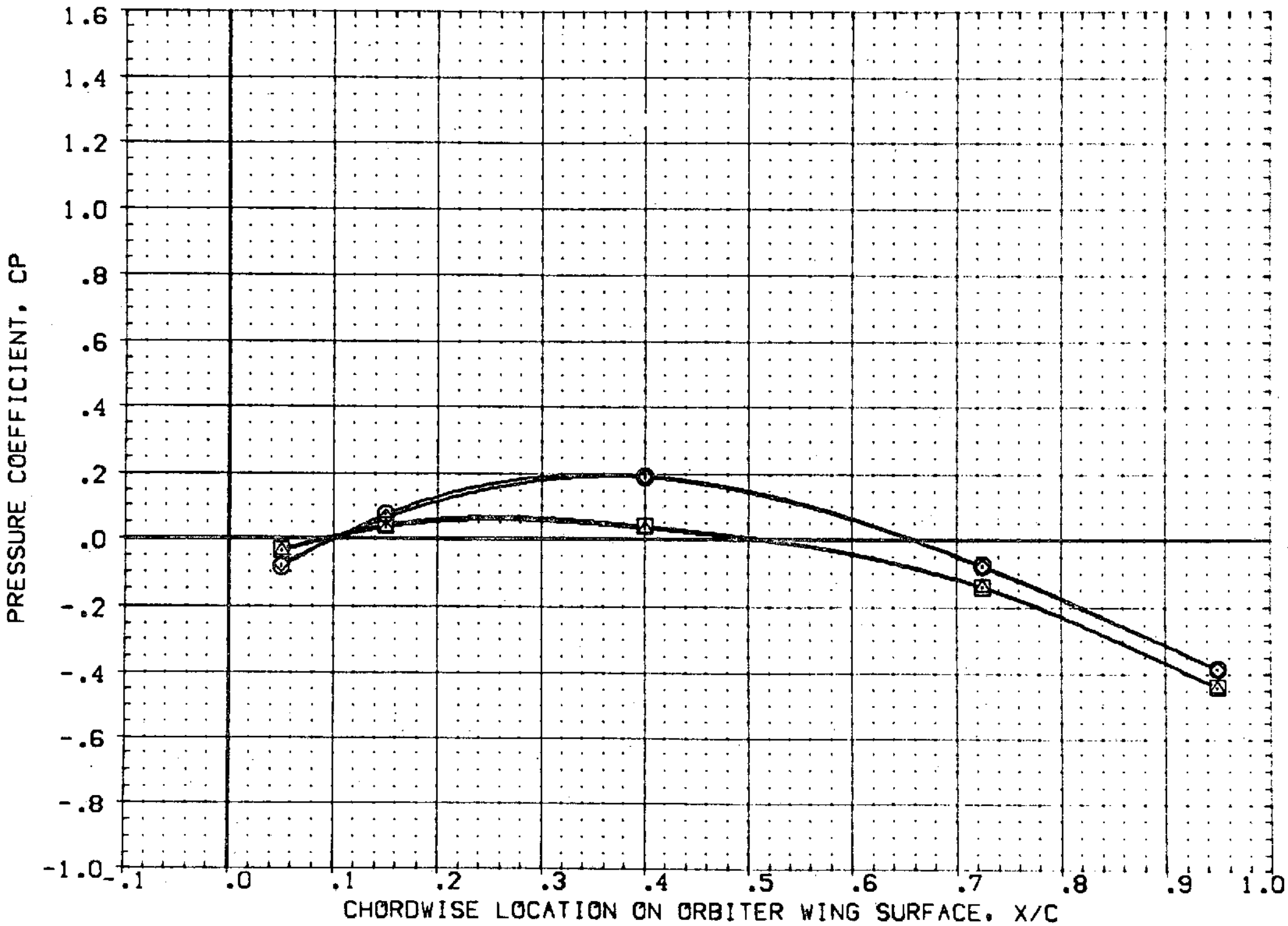


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

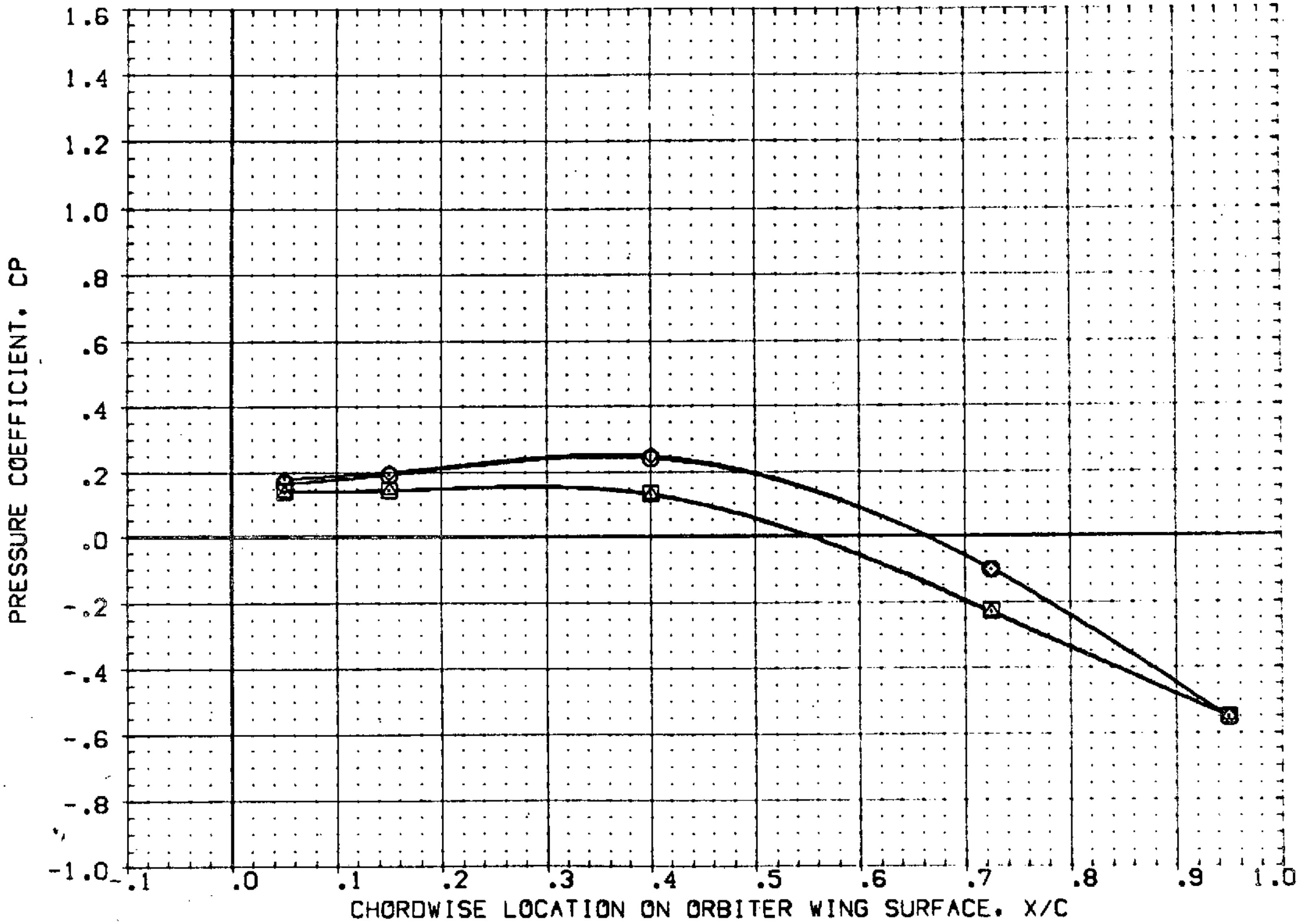


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 2Y/B = .534

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

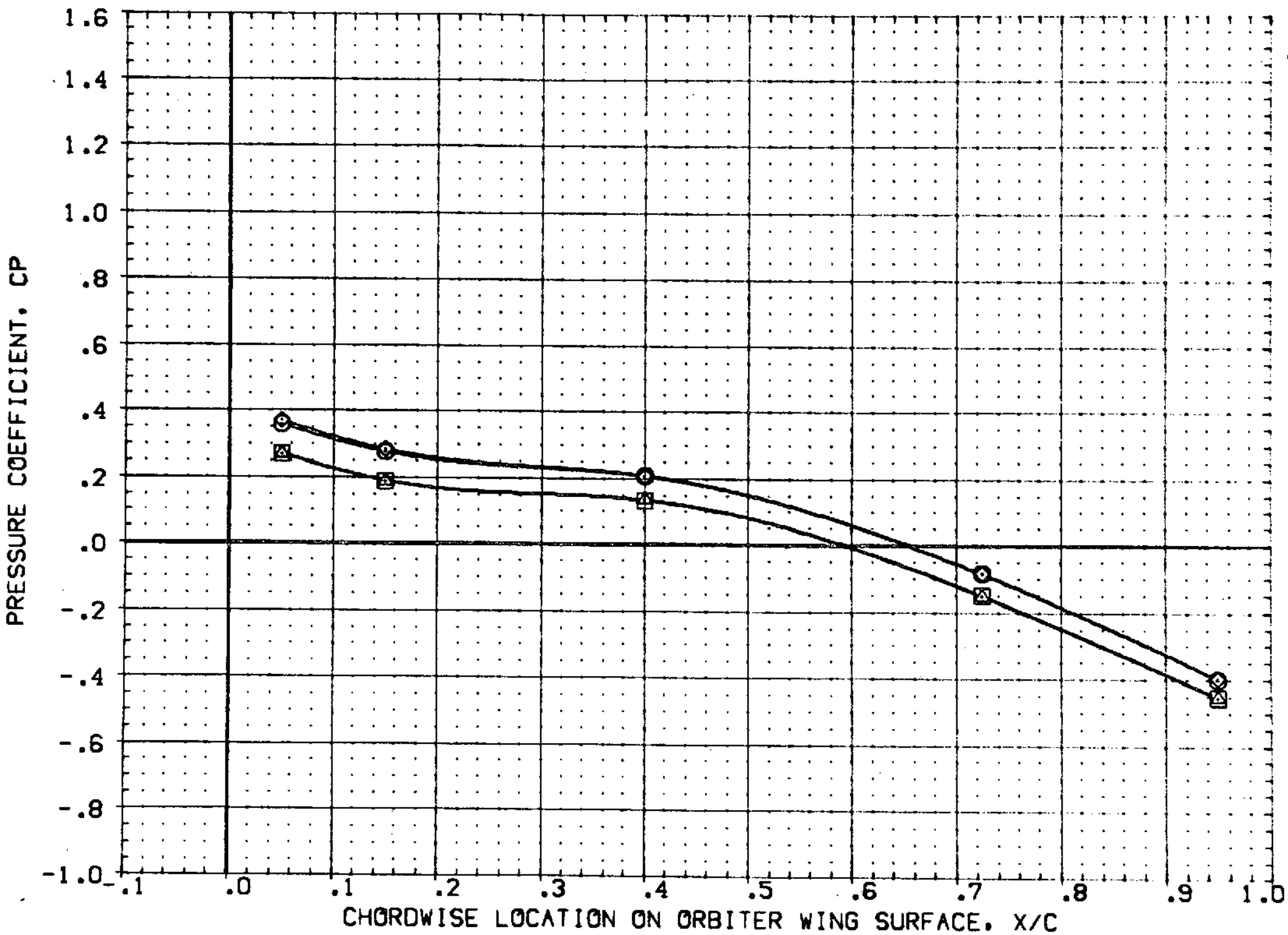


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 2Y/B = .780

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

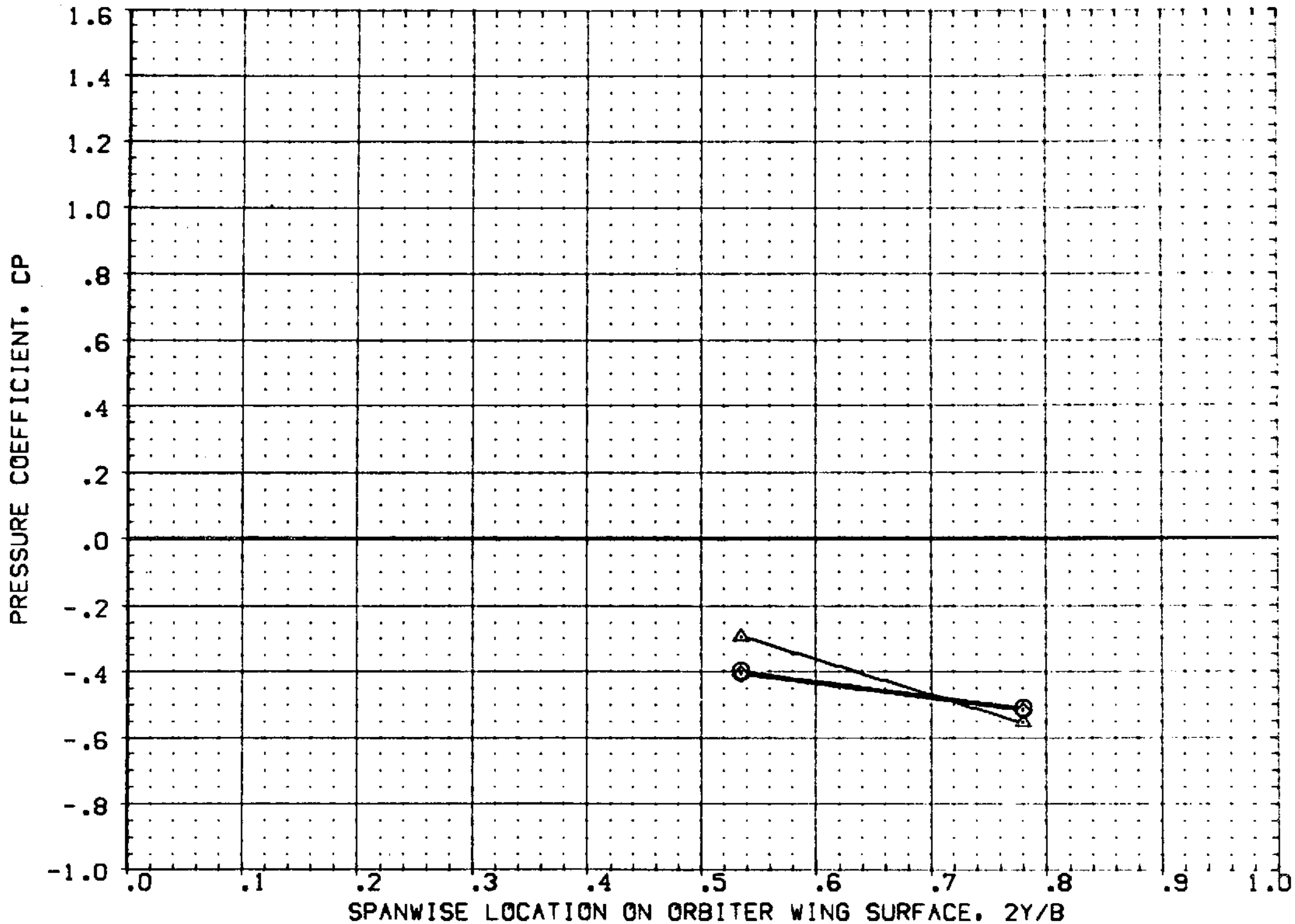


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

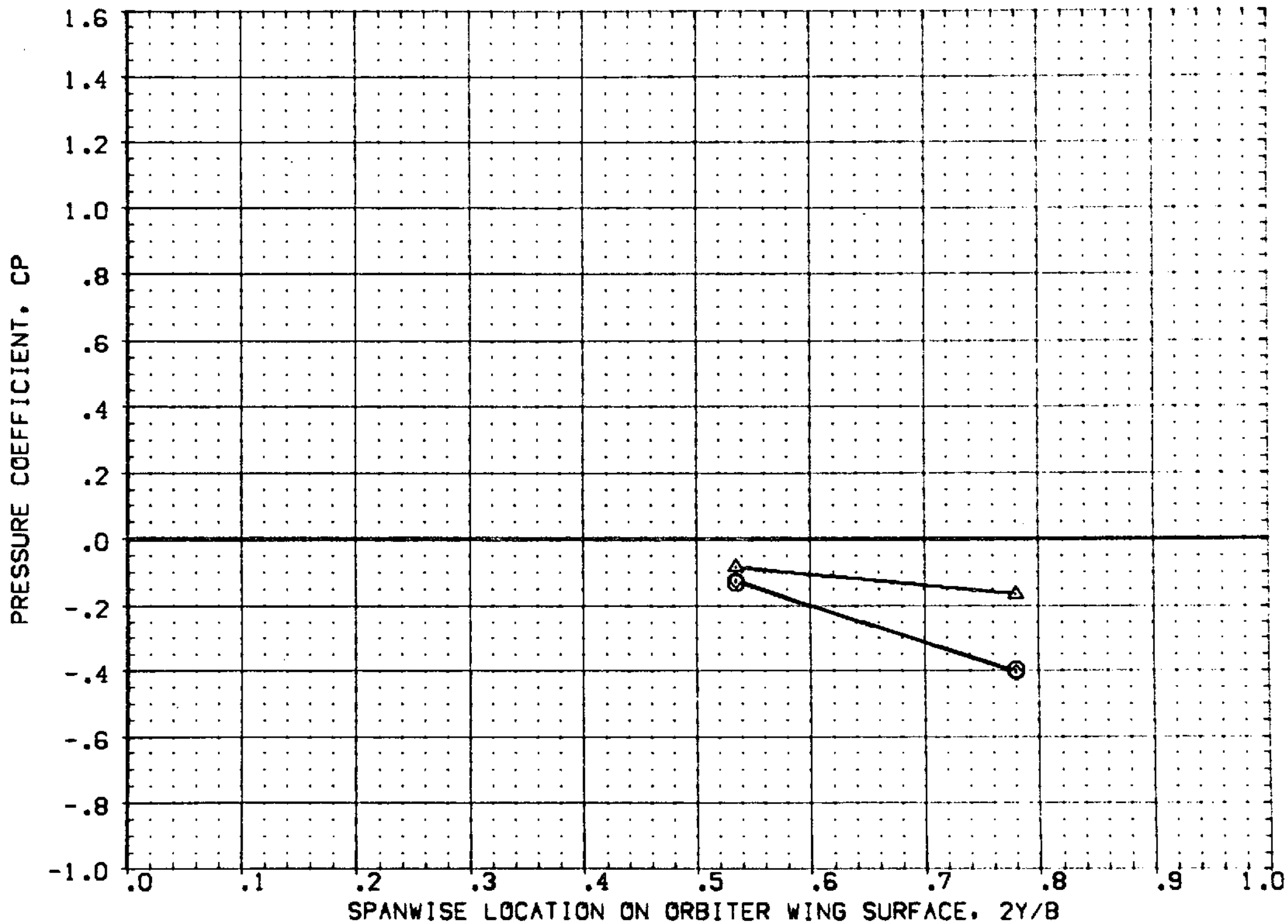


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .150

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

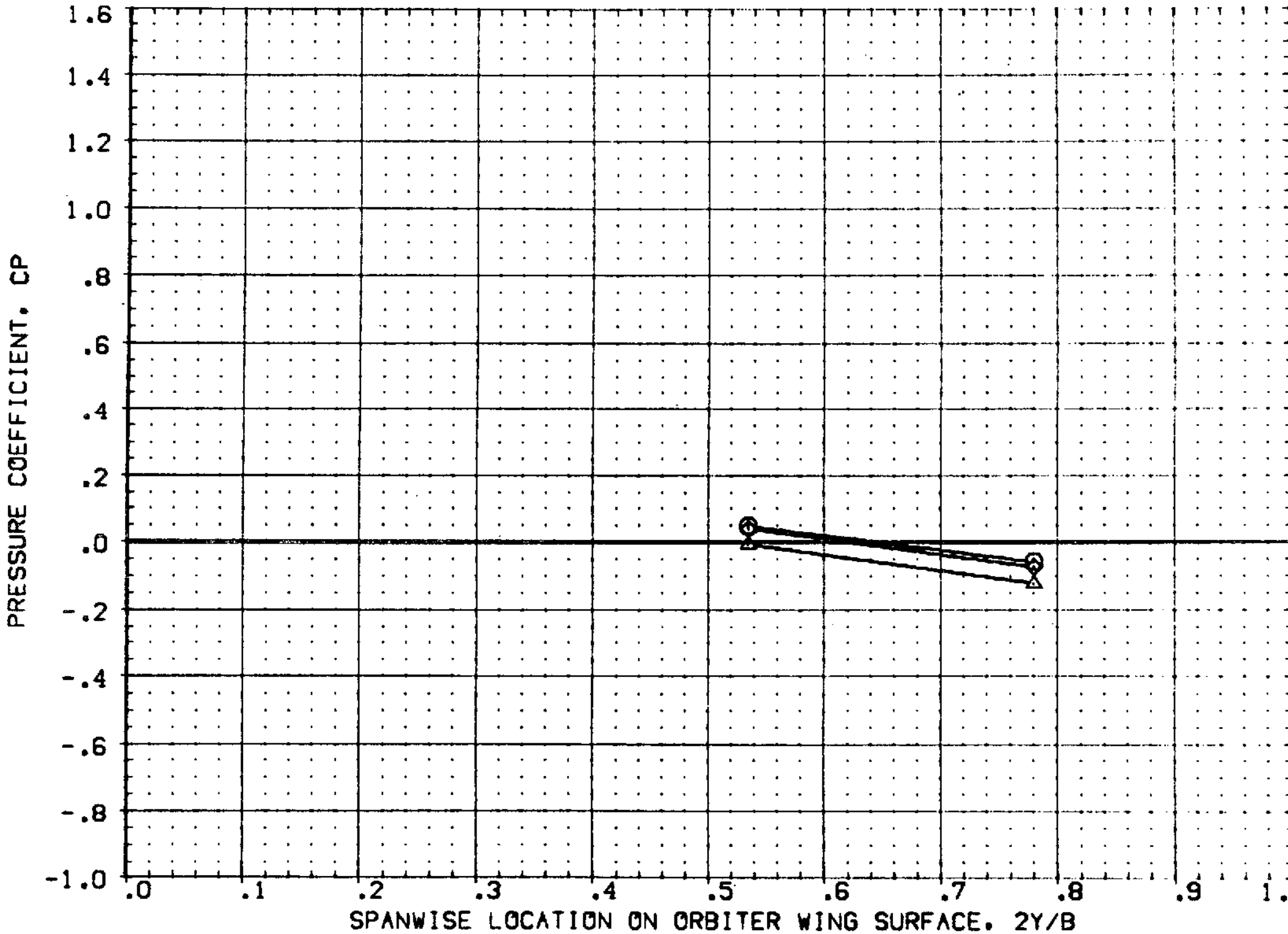


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

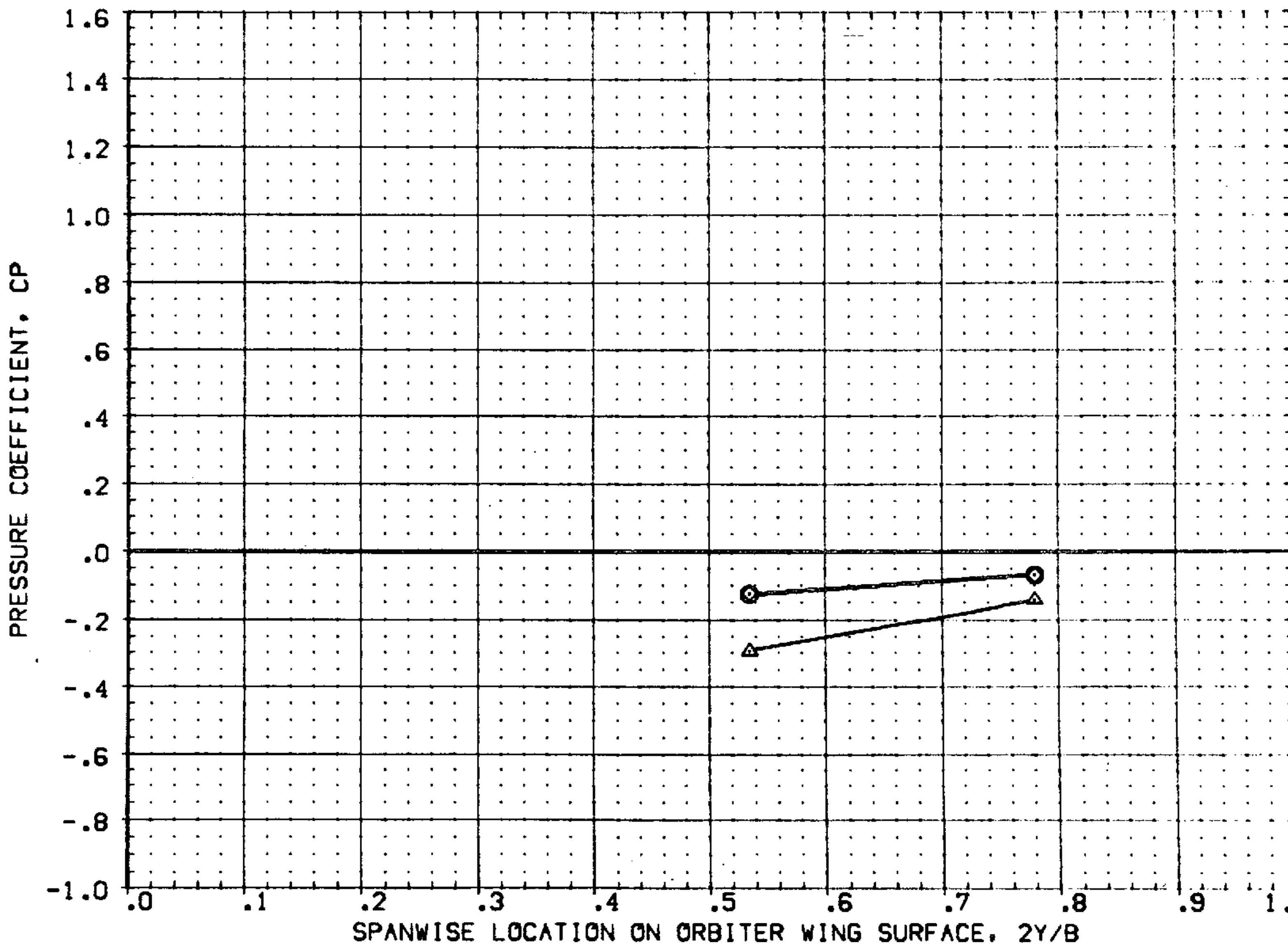


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

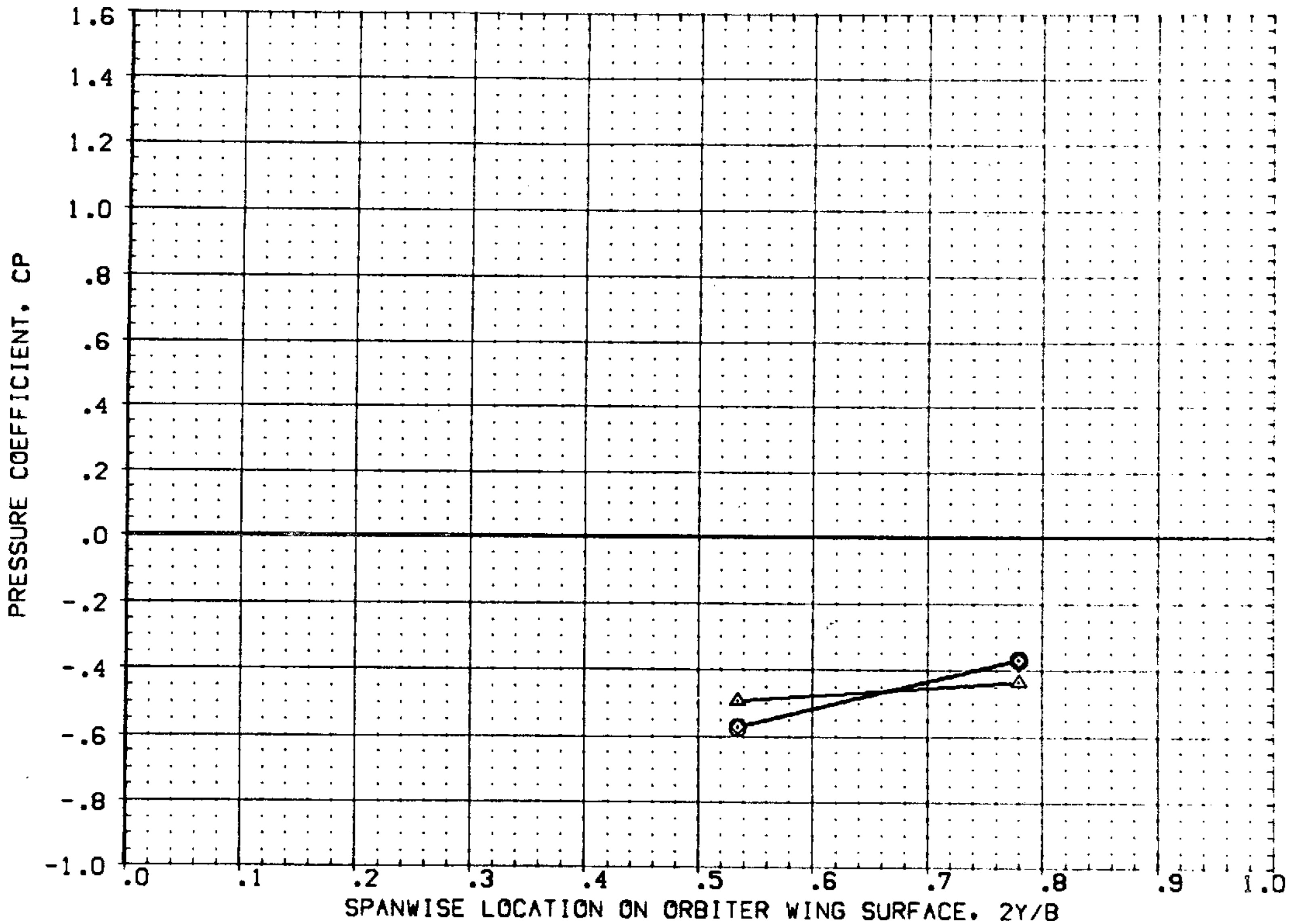


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 01 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

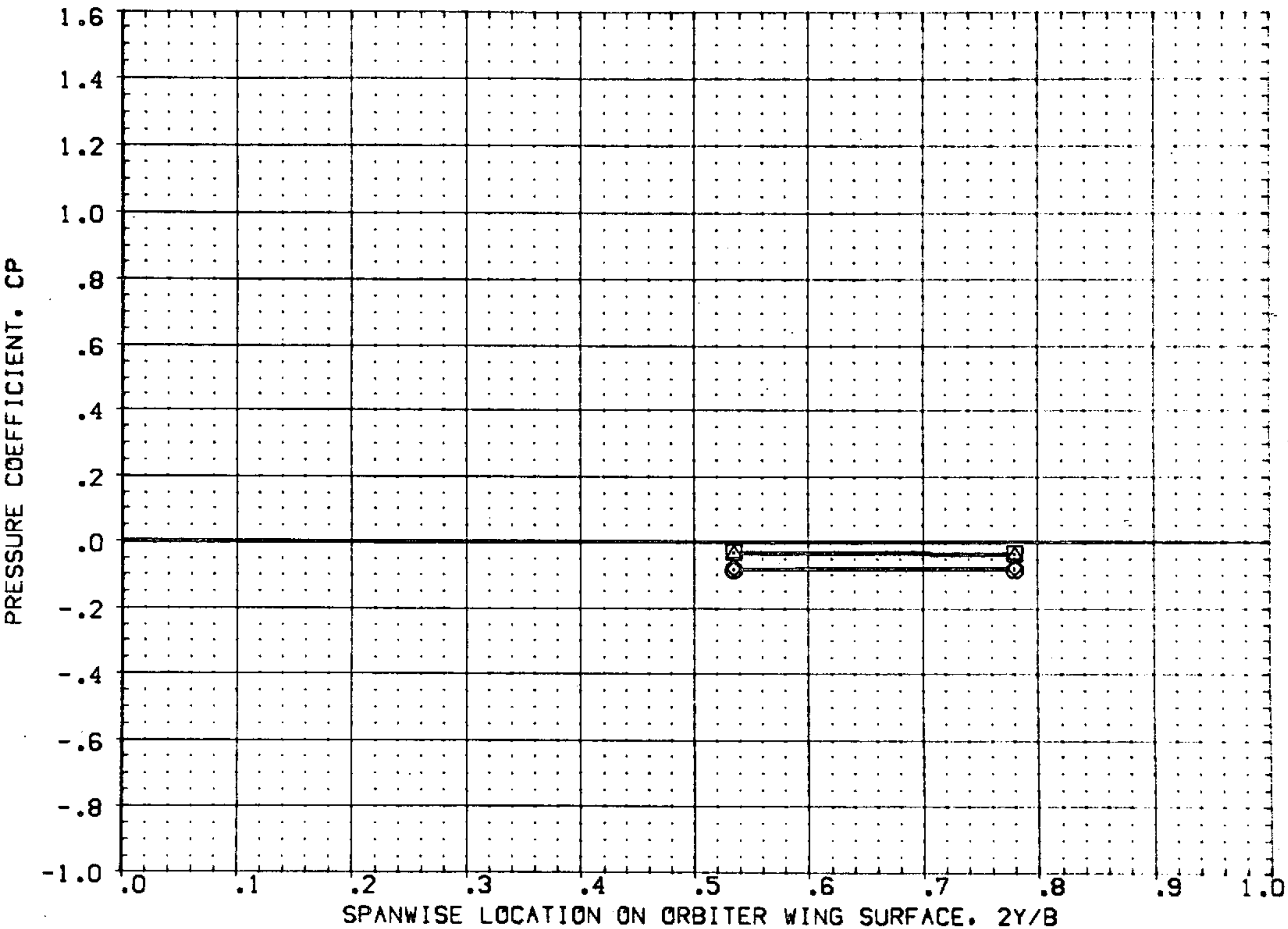


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

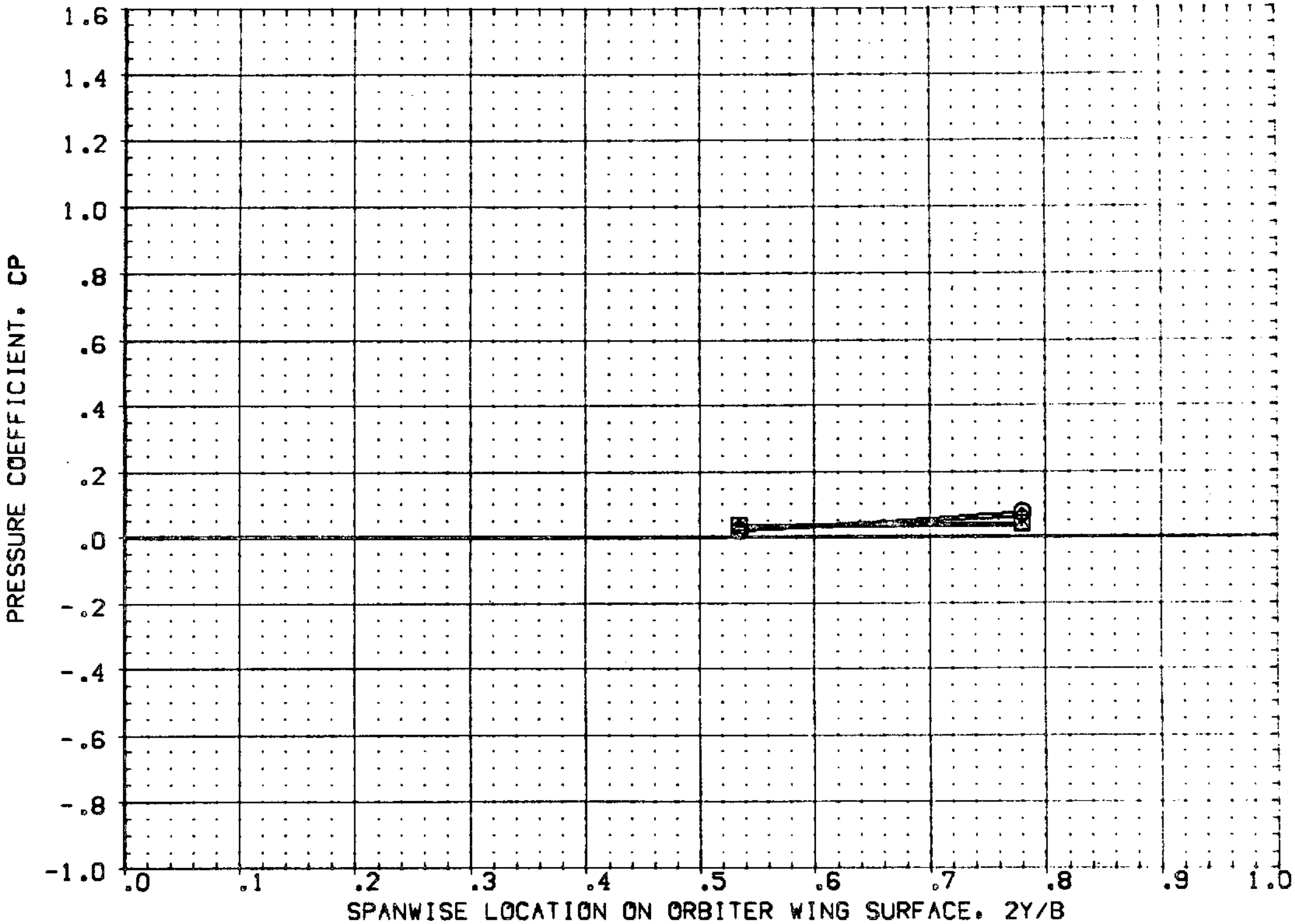


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .150

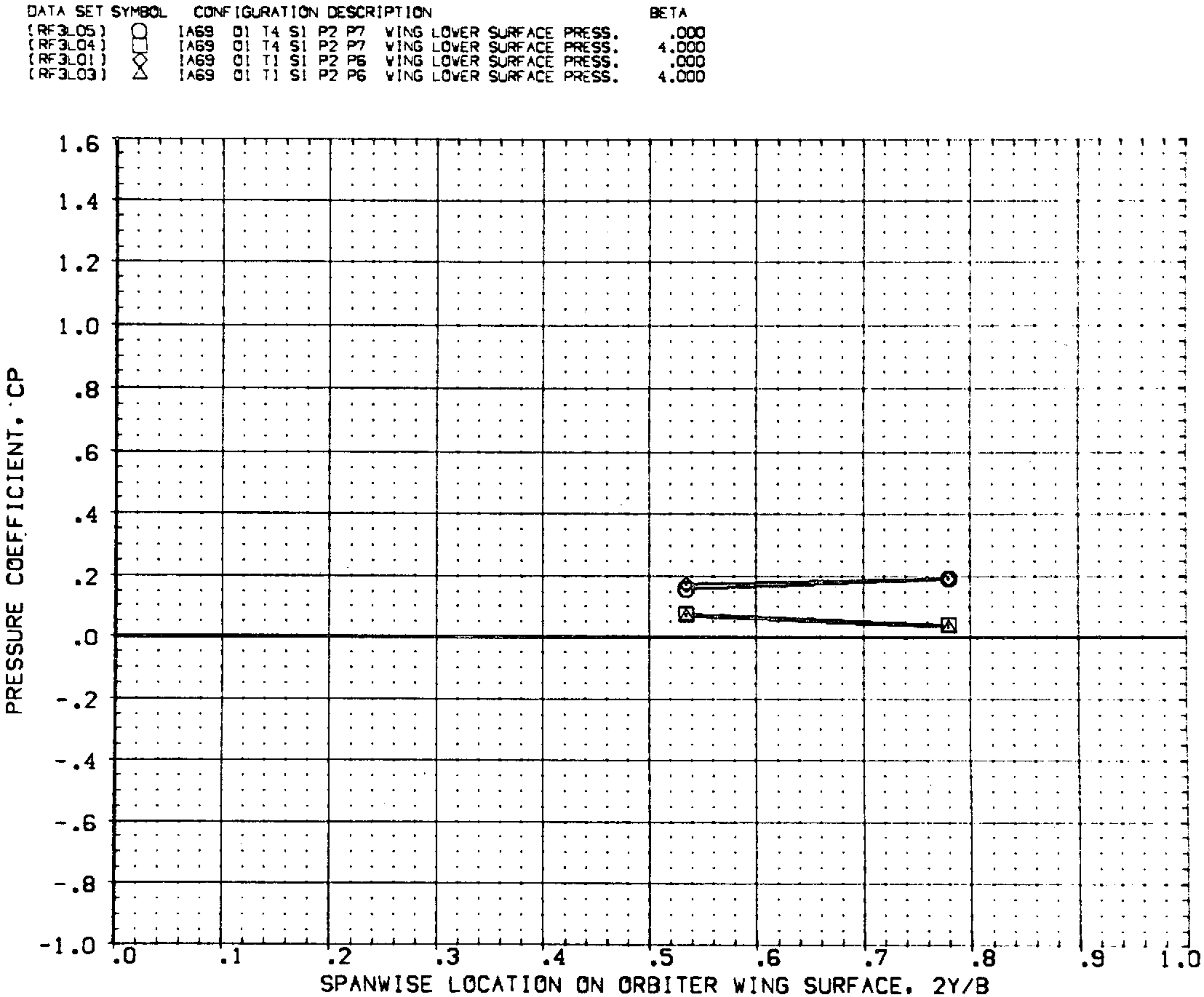


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

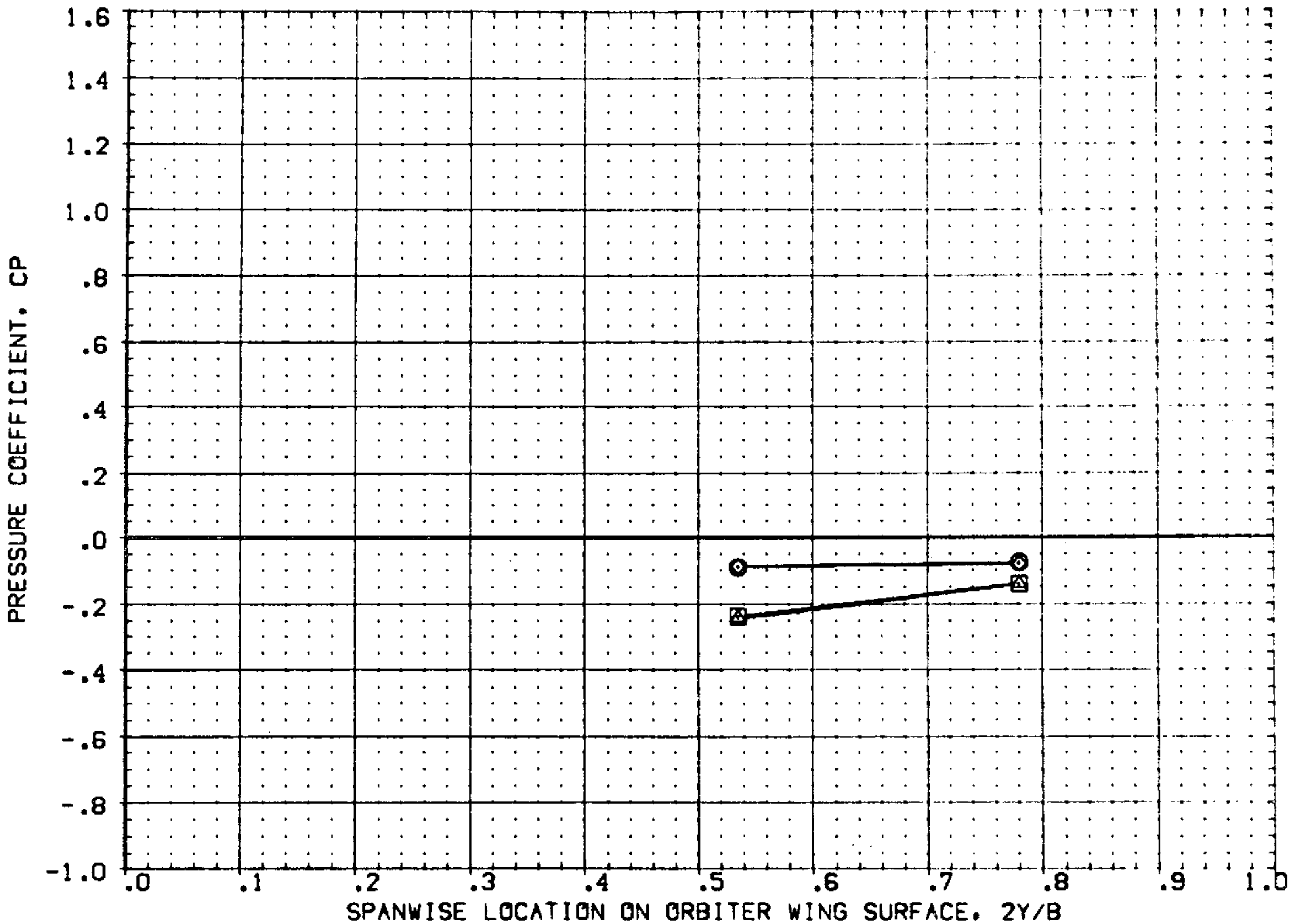


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .725

DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA
(RF3L05) ○ IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS. .000
(RF3L04) □ IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS. 4.000
(RF3L01) ◇ IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS. .000
(RF3L03) △ IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS. 4.000

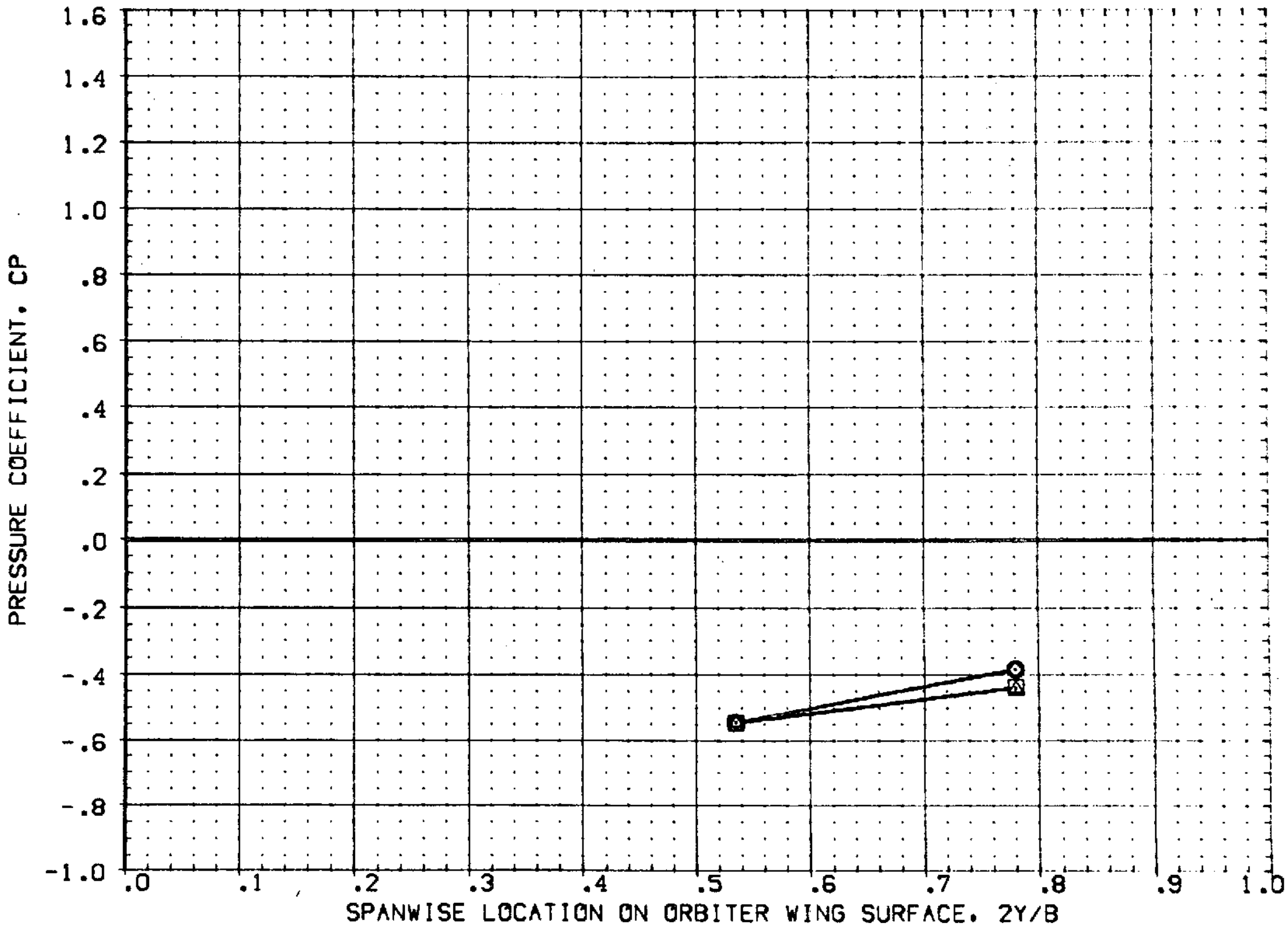


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/C = .950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

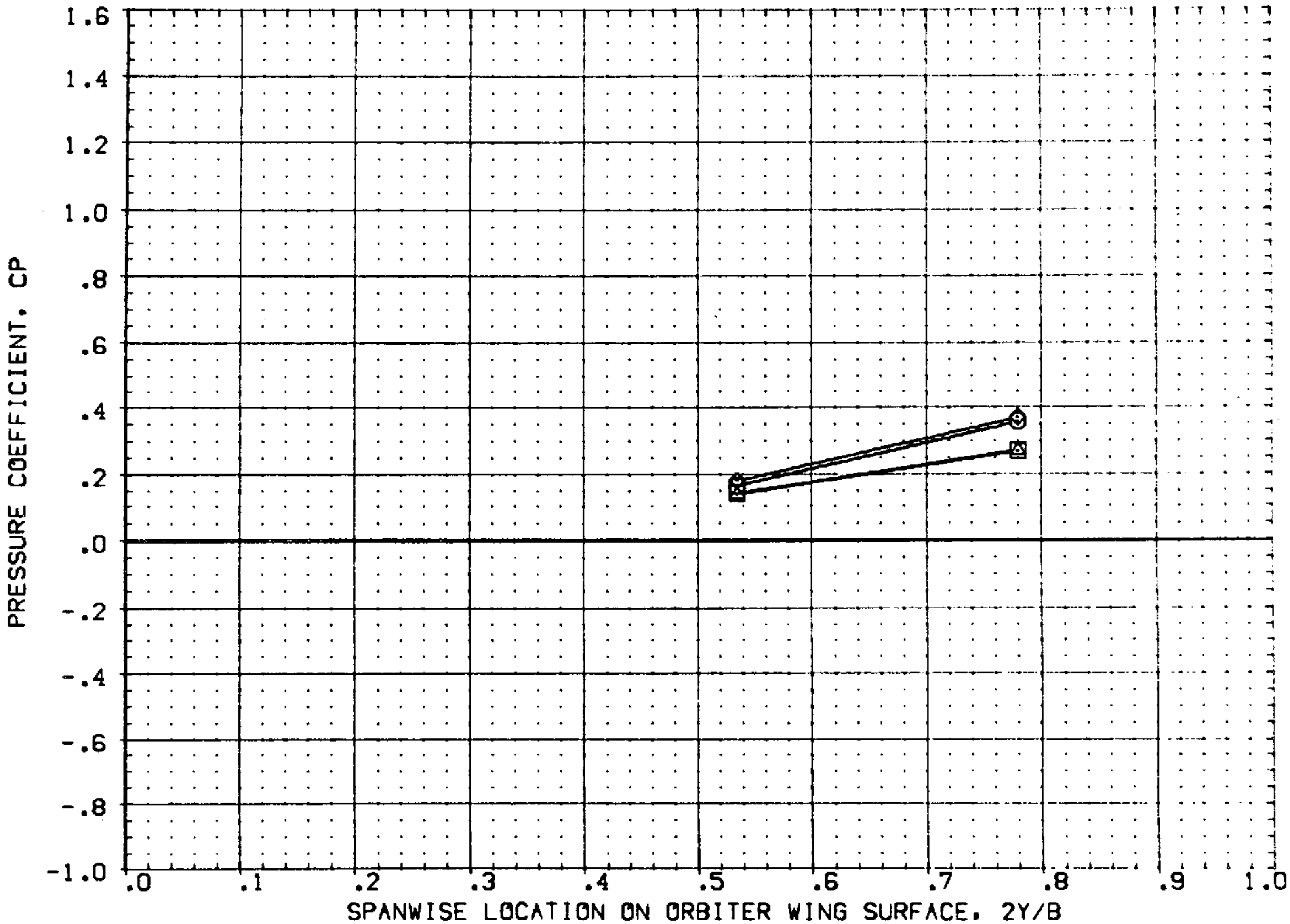


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .050

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

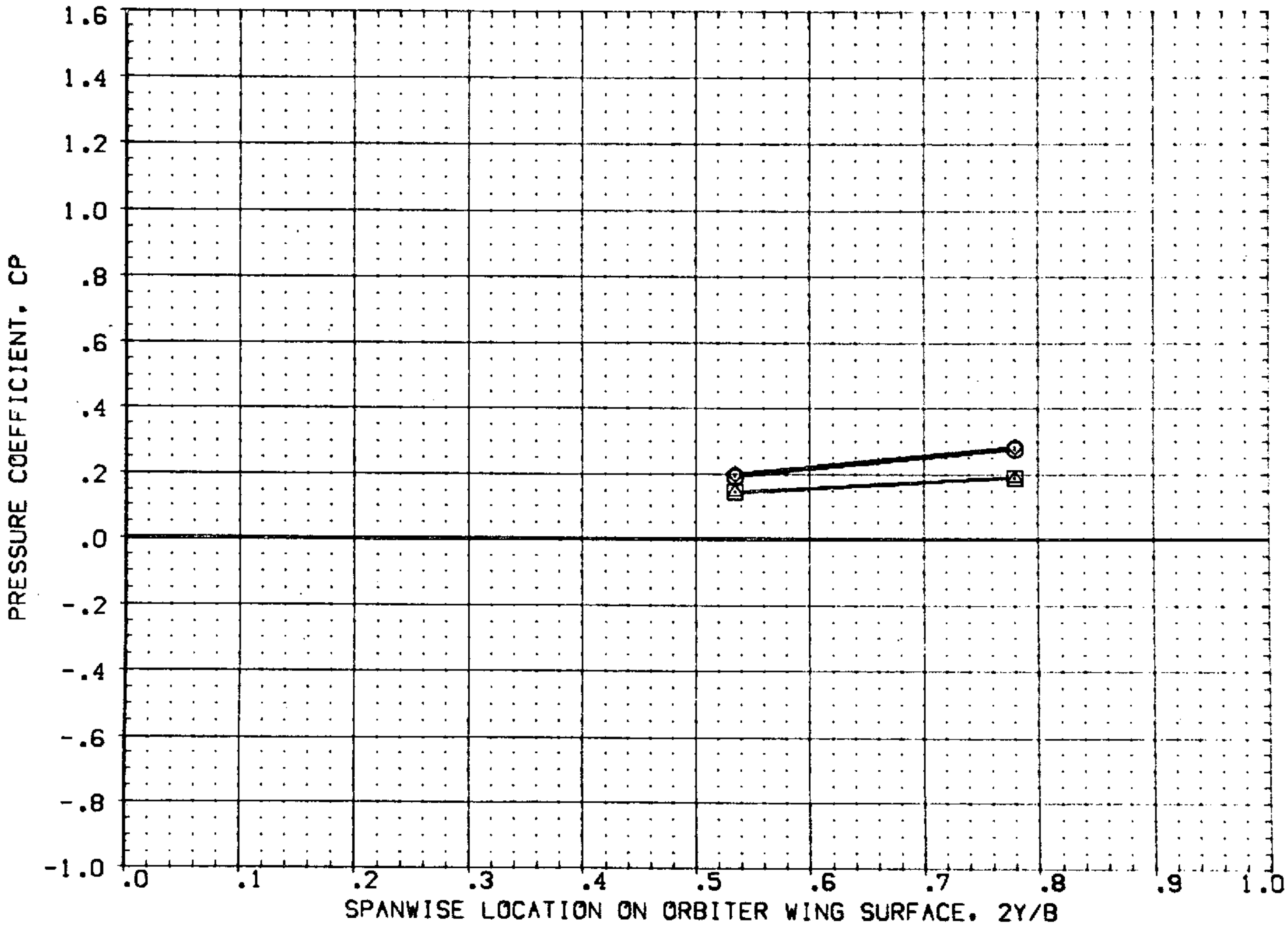


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .150

DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

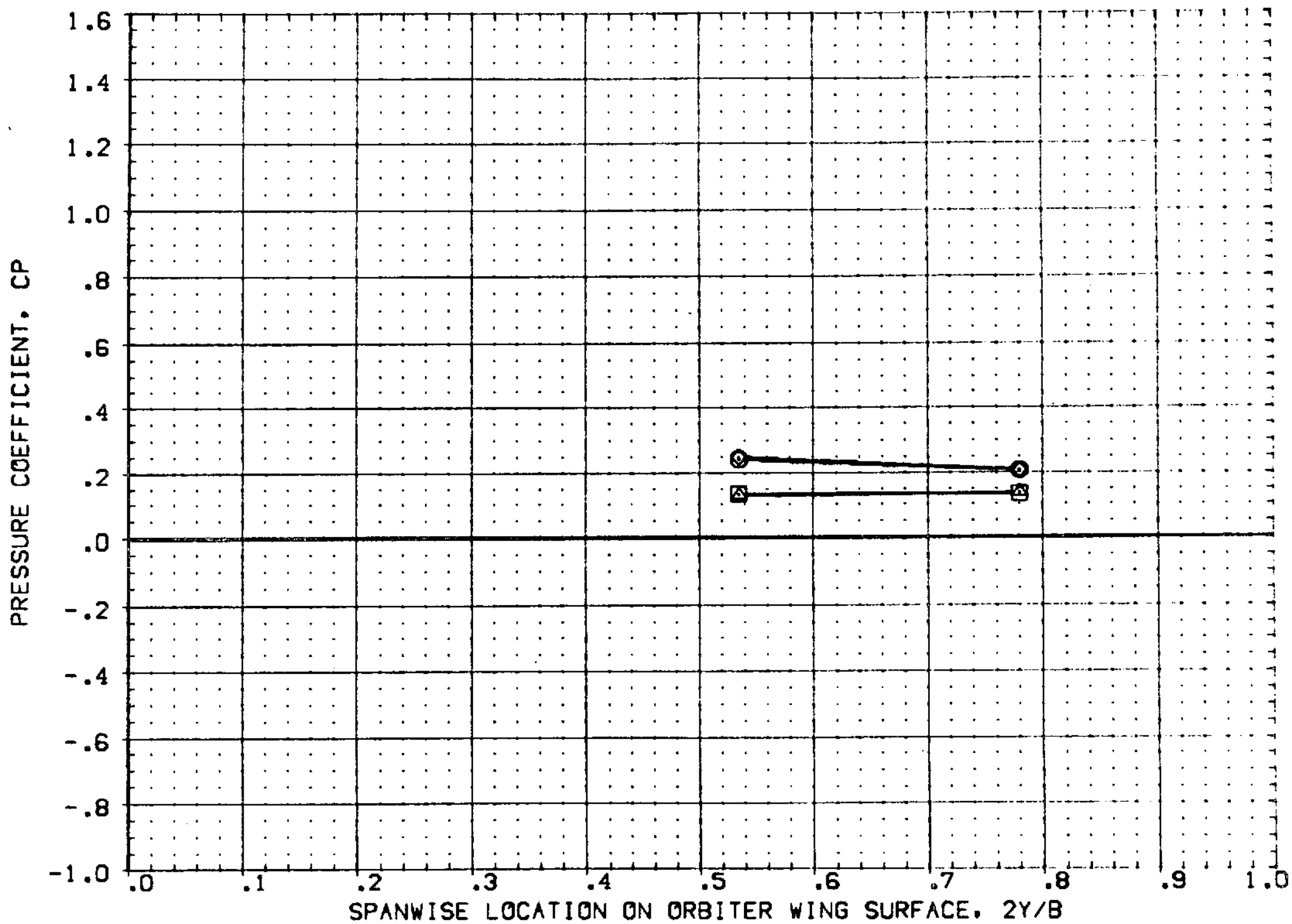


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3L05]	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
[RF3L04]	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
[RF3L01]	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
[RF3L03]	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

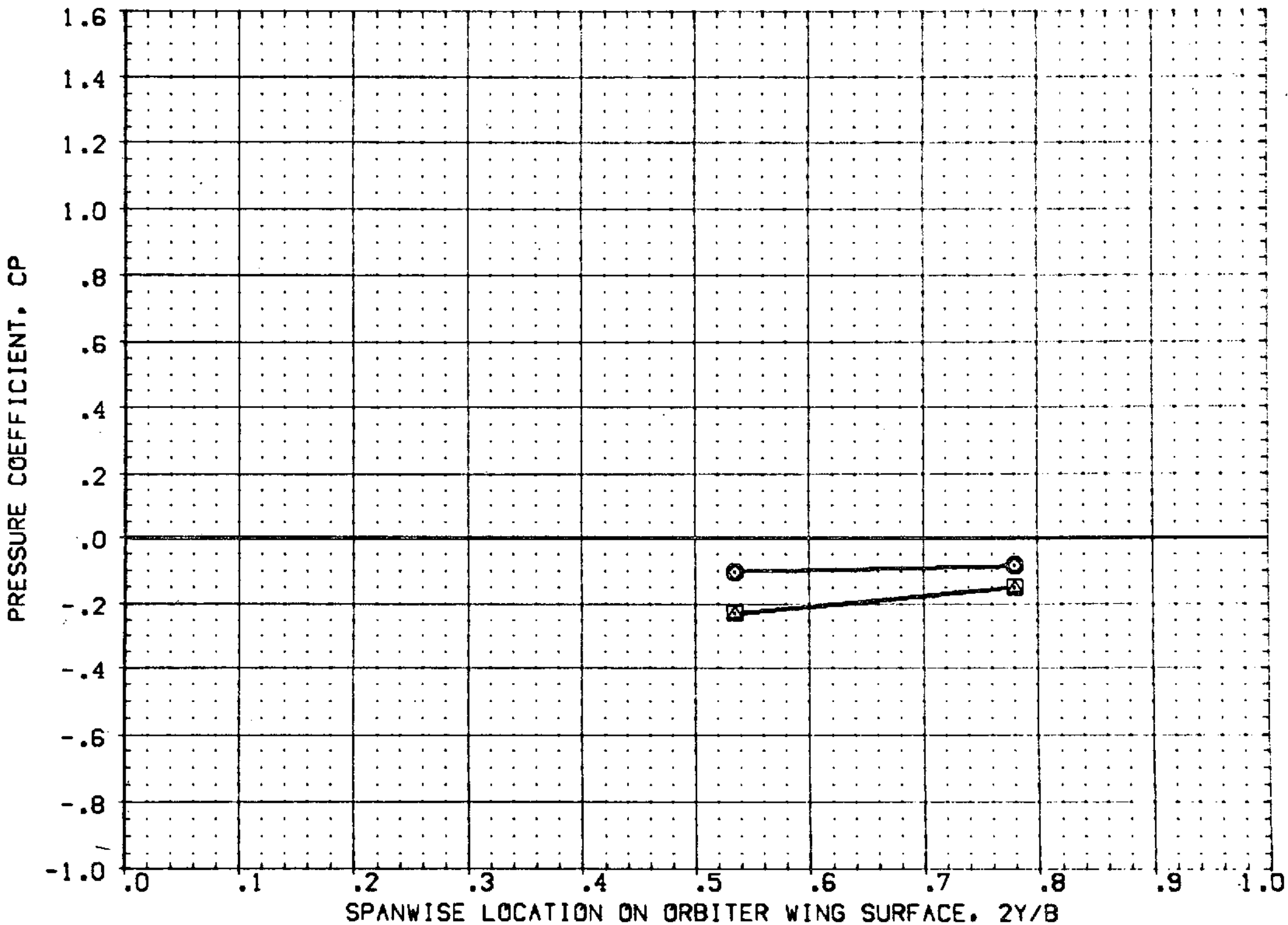


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .725

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3L05)	○	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	.000
(RF3L04)	□	IA69 O1 T4 S1 P2 P7 WING LOWER SURFACE PRESS.	4.000
(RF3L01)	◇	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.000
(RF3L03)	△	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	4.000

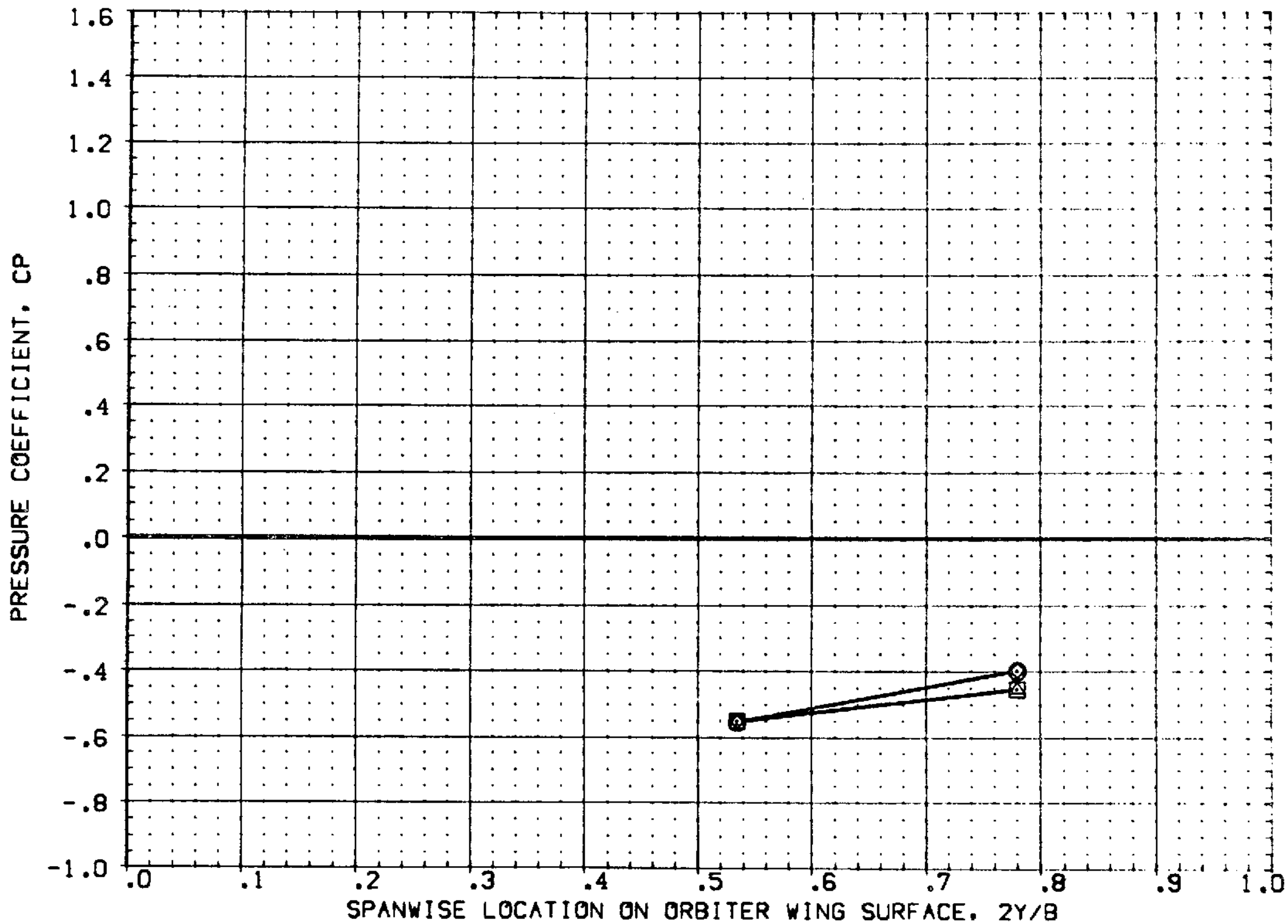


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/C = .950 PAGE 120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

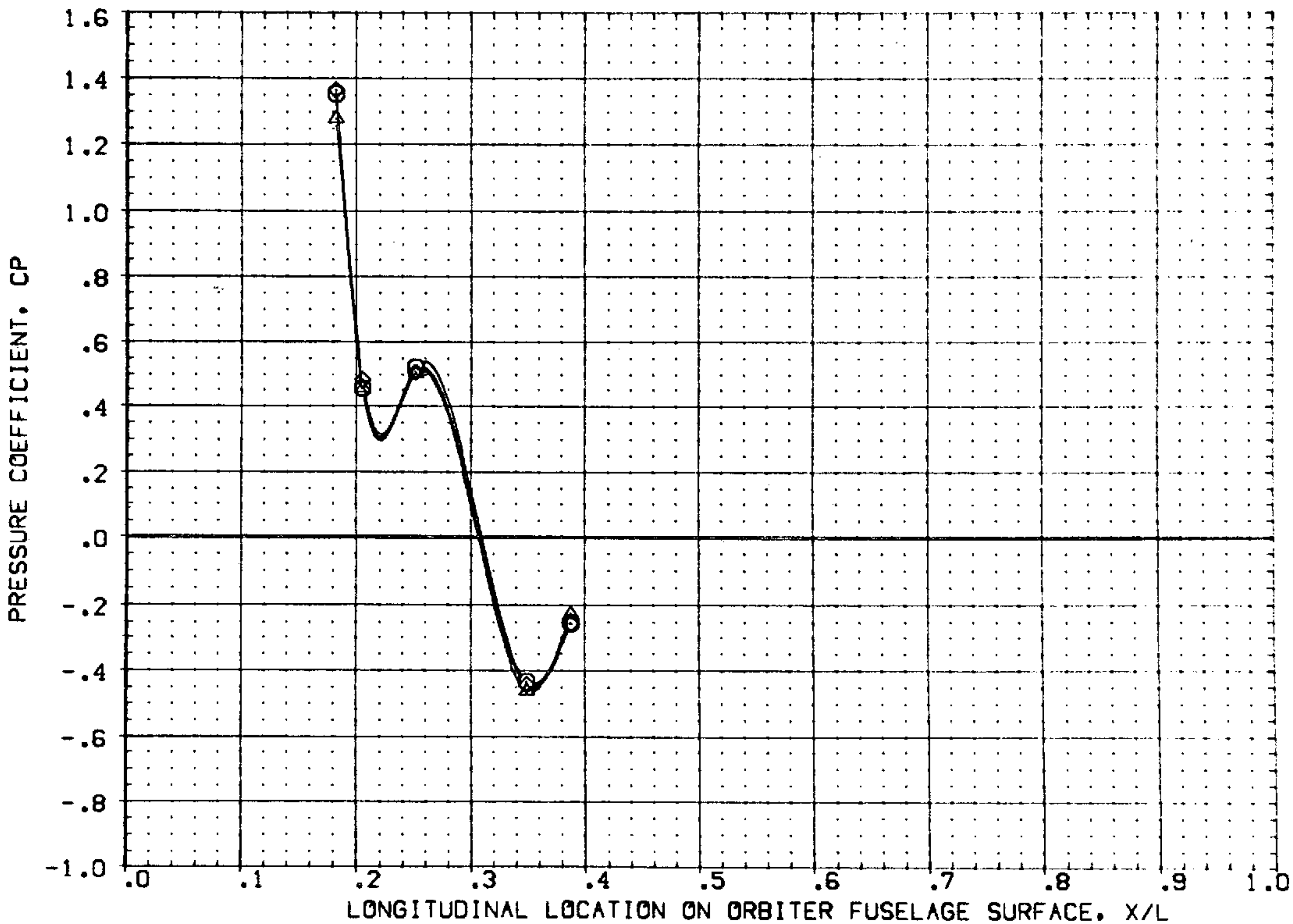


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3F05]	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
[RF3F04]	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
[RF3F01]	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
[RF3F03]	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

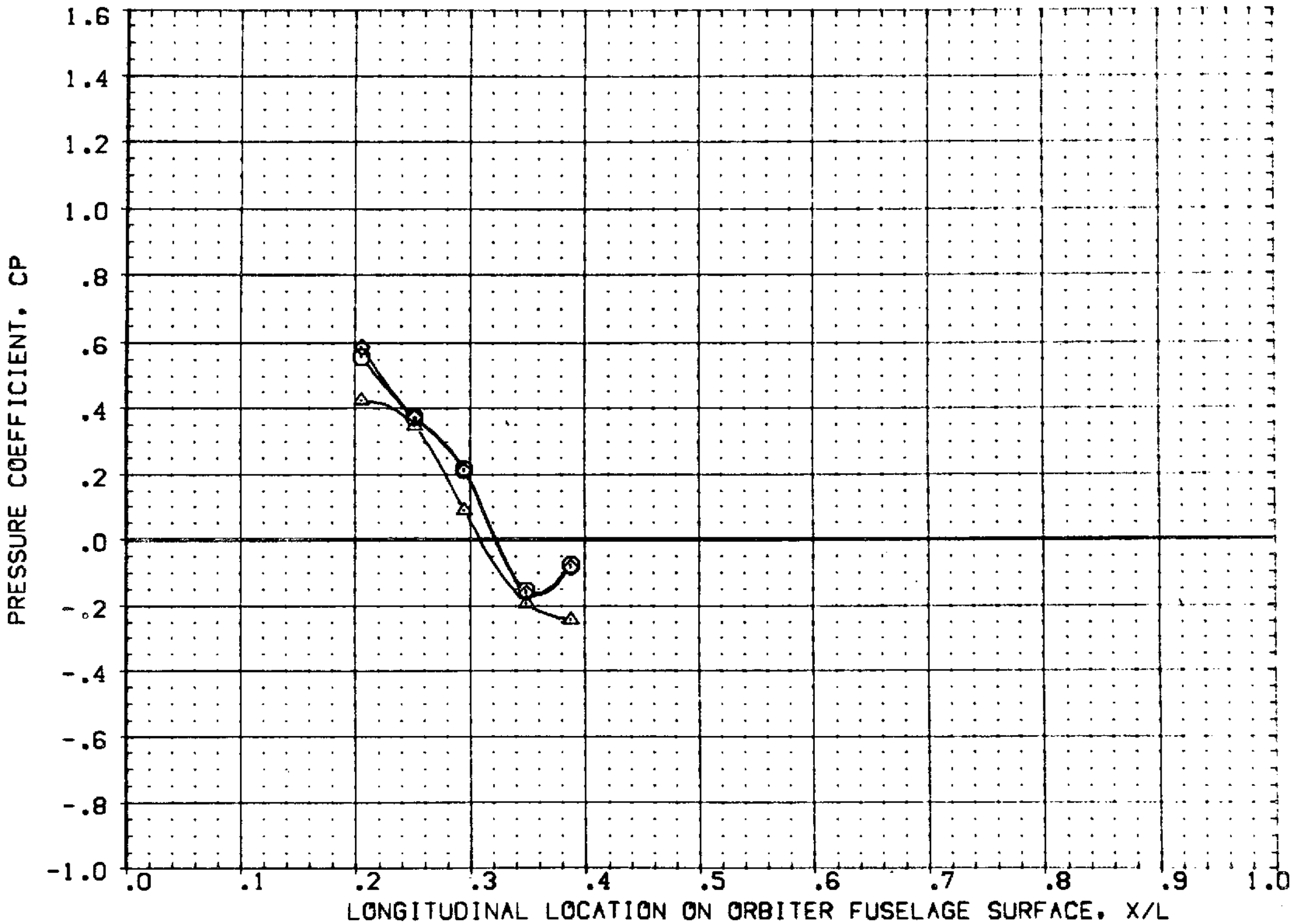


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 PHI = 40.000 PAGE 122

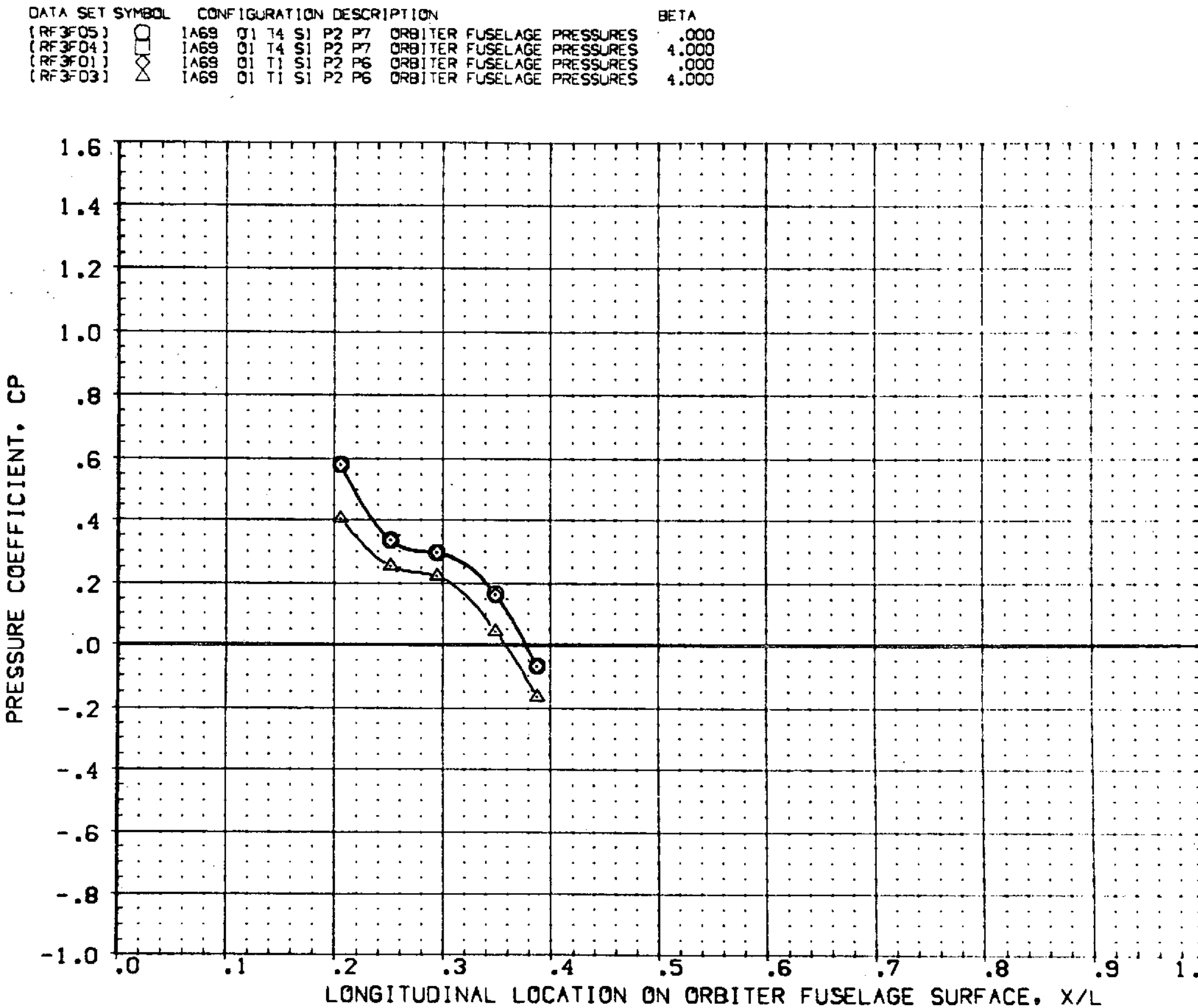


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

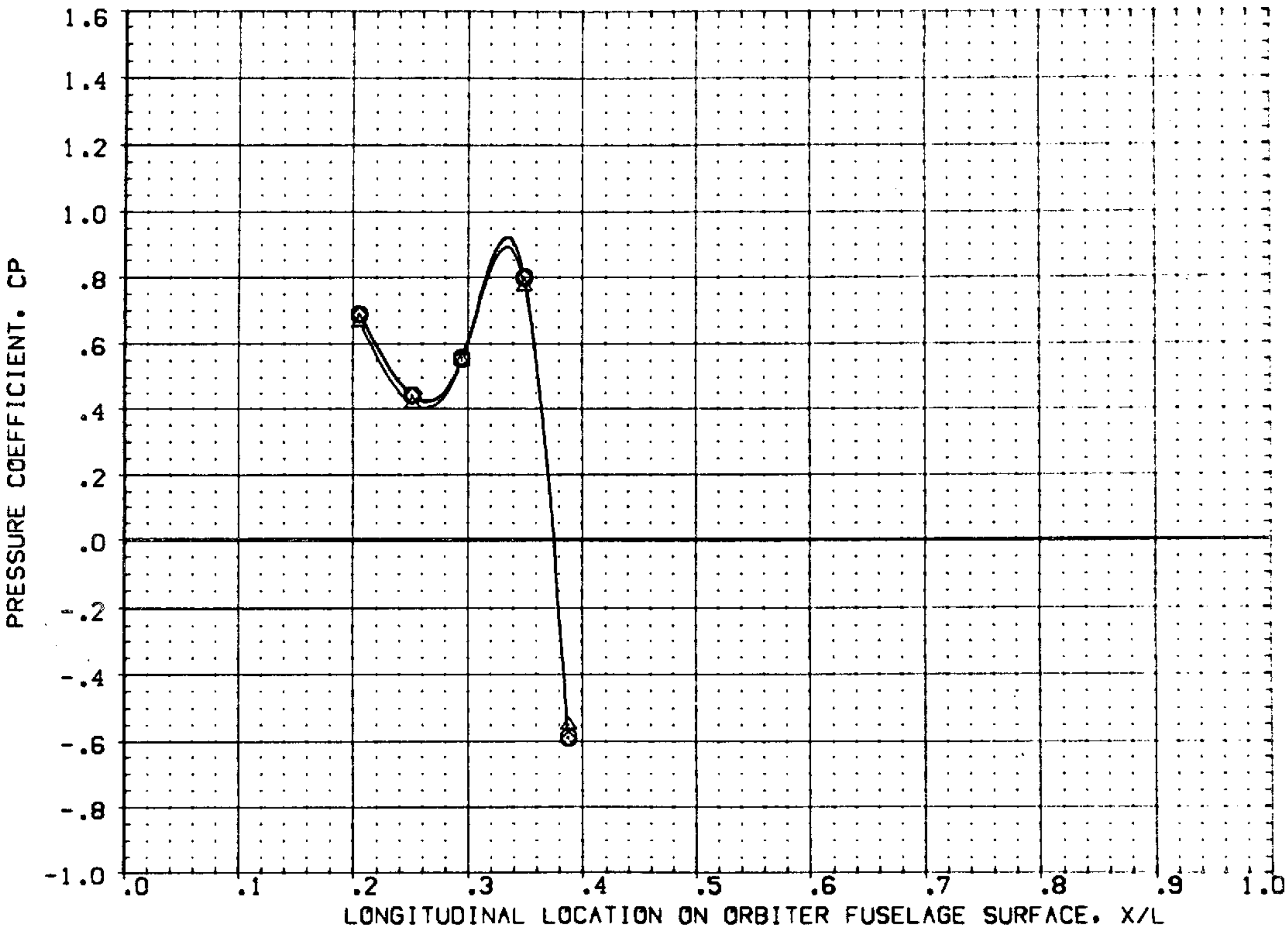


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	1A69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	1A69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	1A69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	1A69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

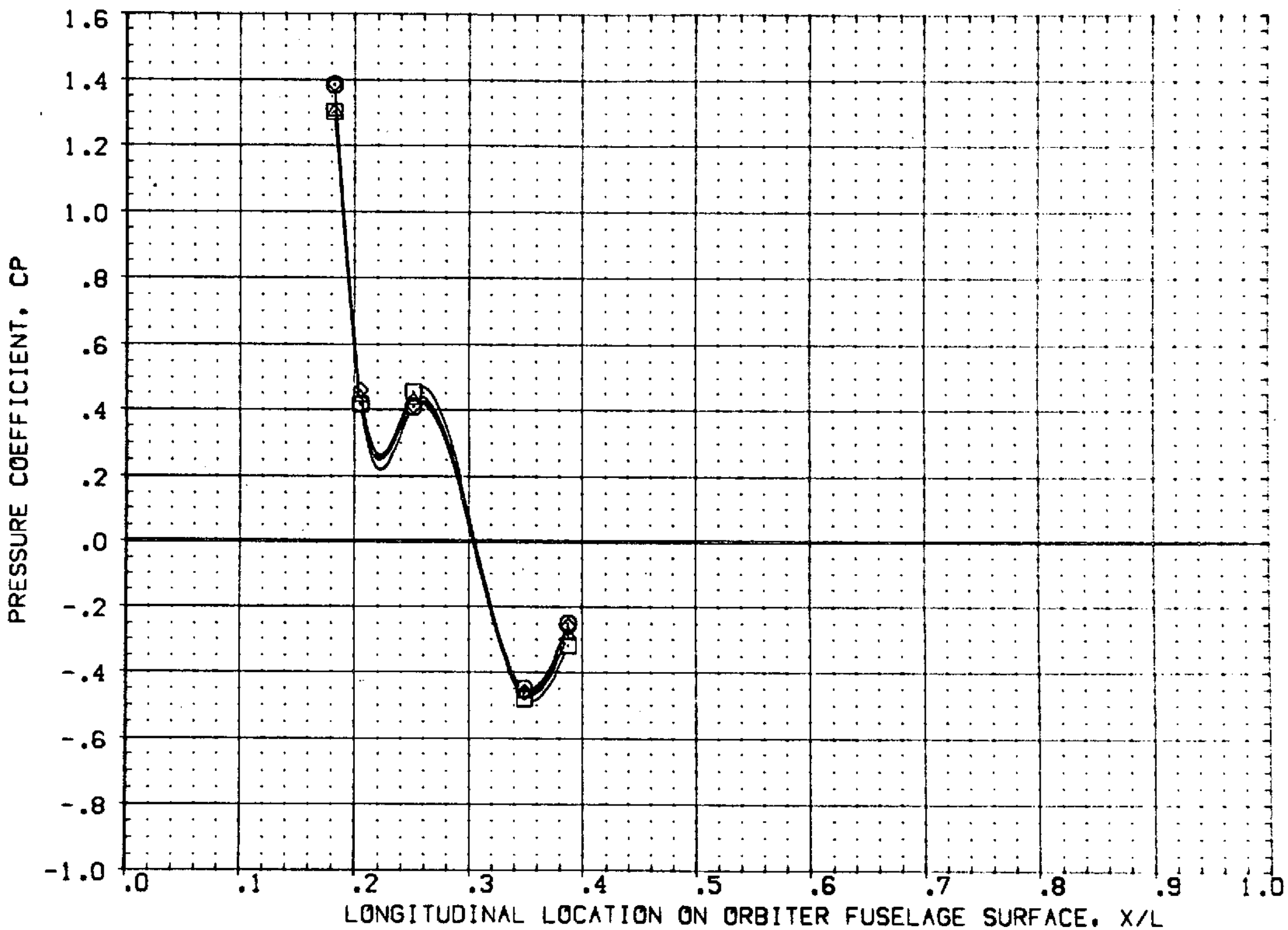


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

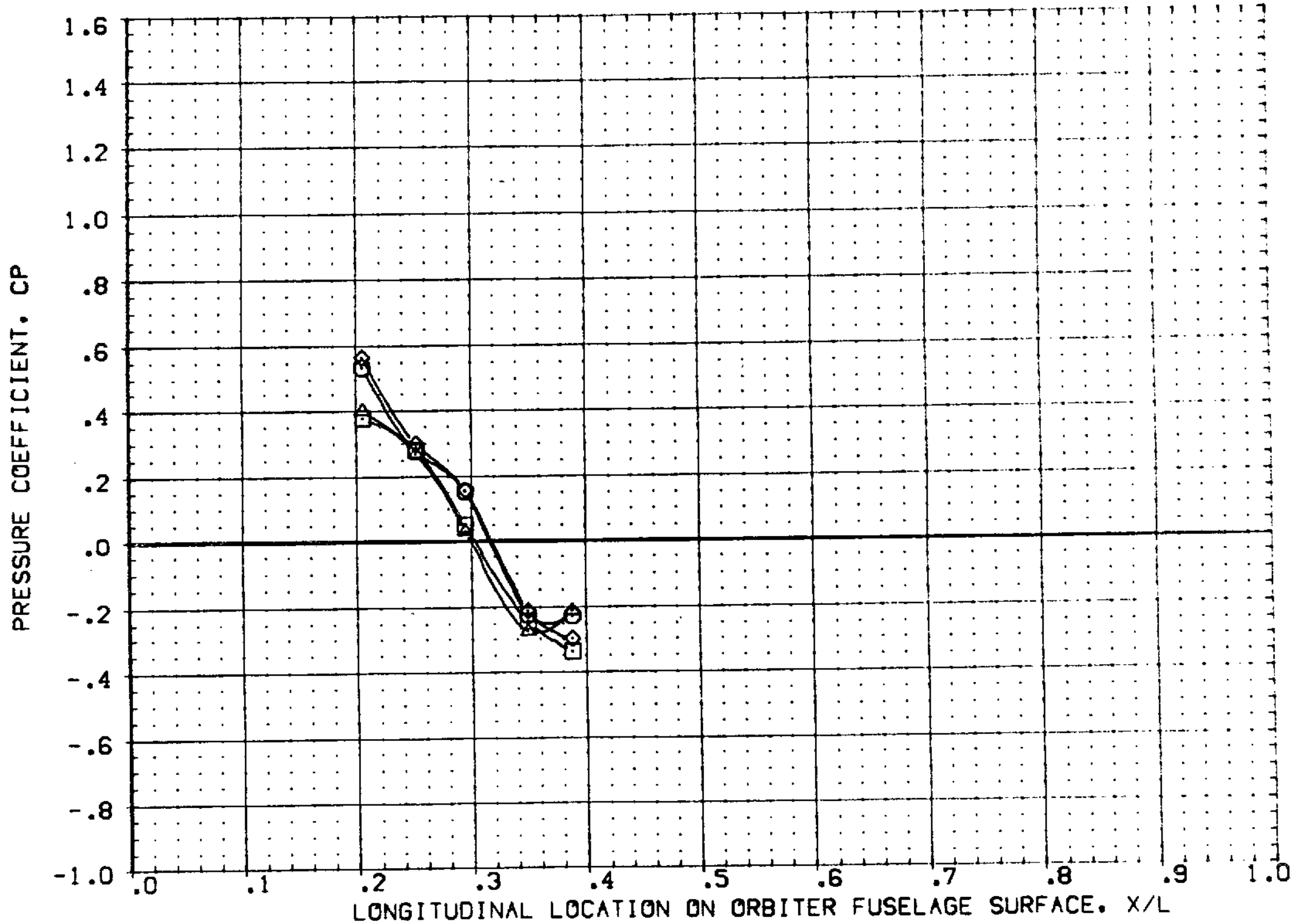


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 PHI = 40.000

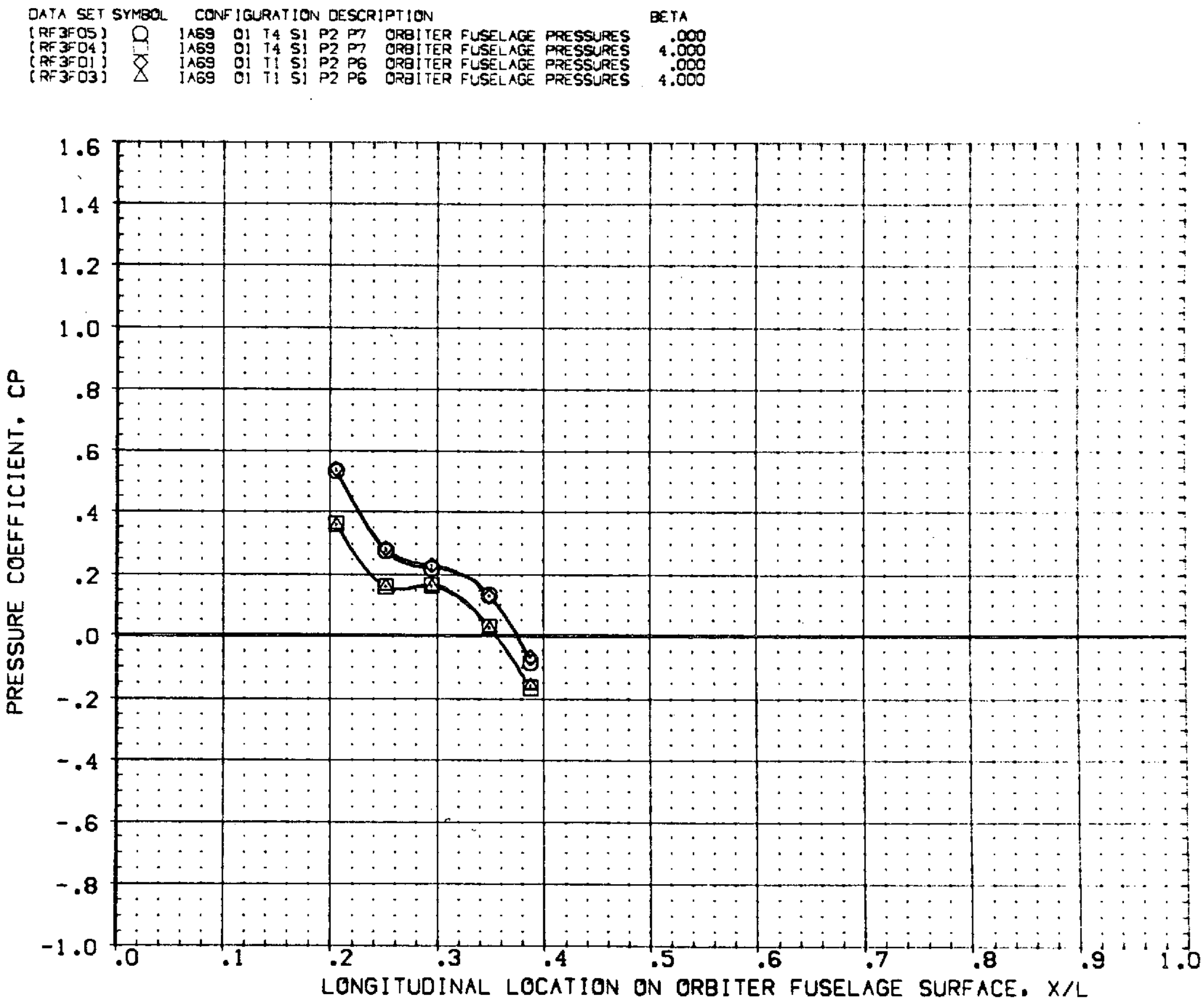


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
[RF3F05]	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
[RF3F04]	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
[RF3F01]	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
[RF3F03]	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

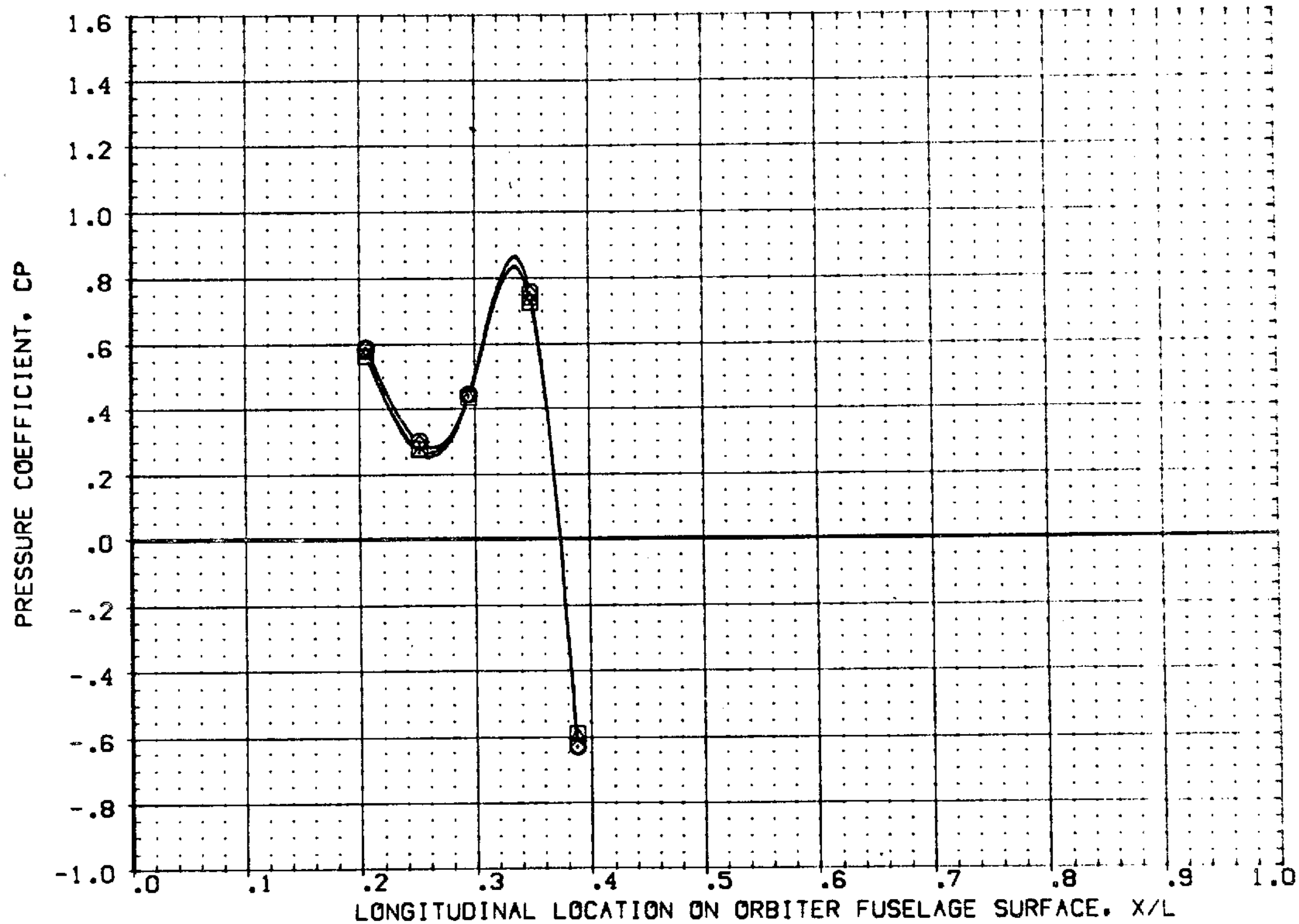


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

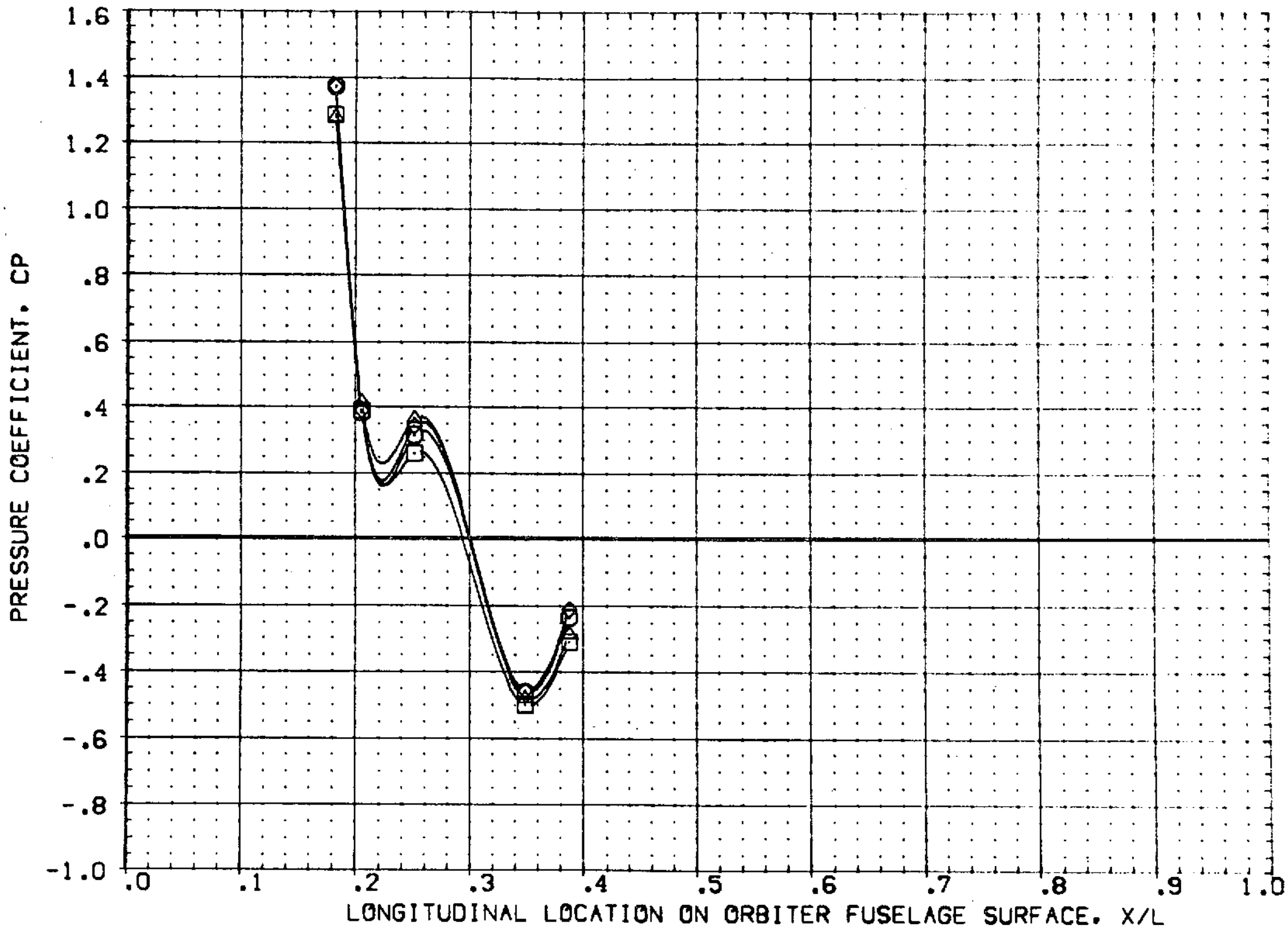


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

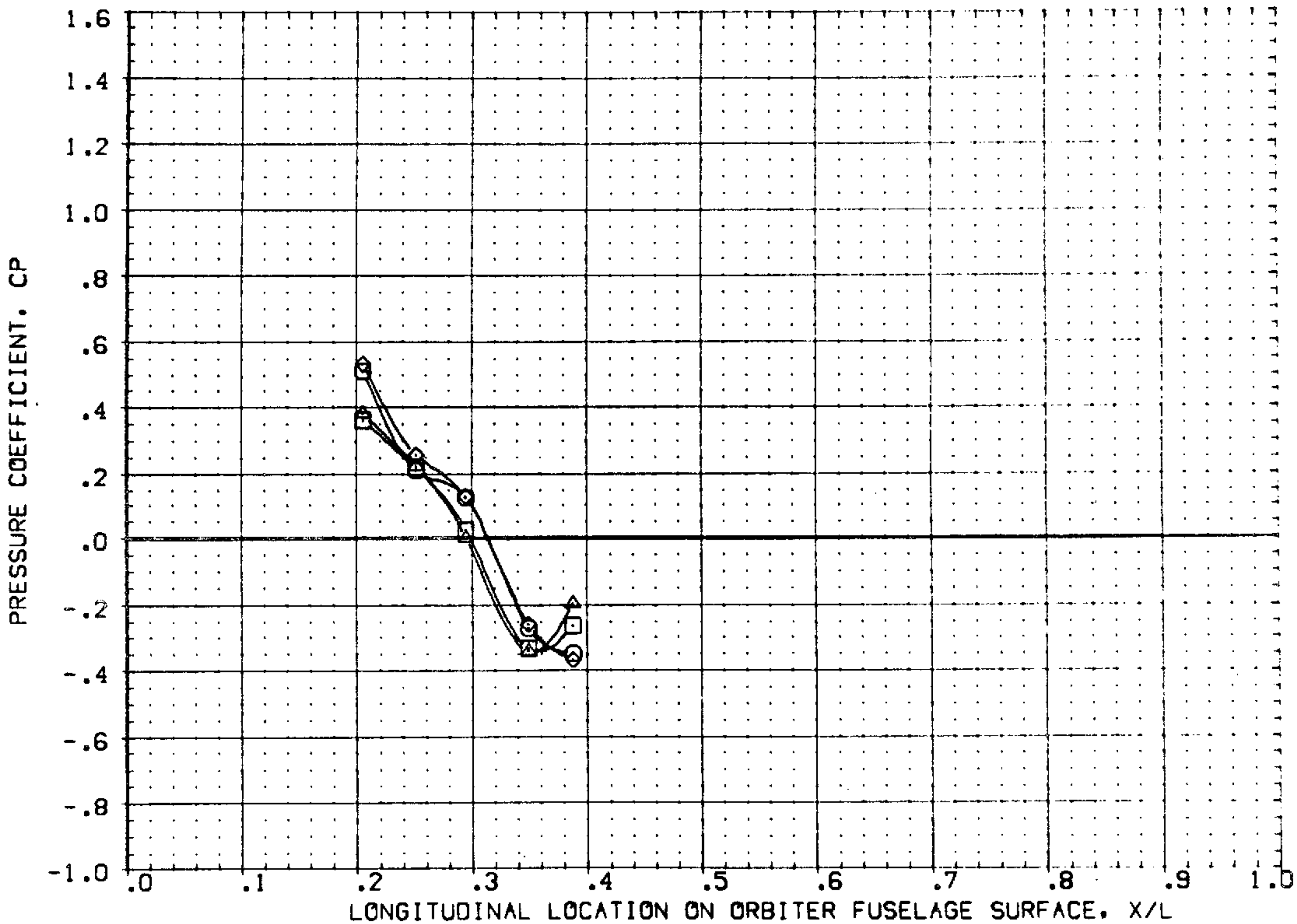


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 PHI = 40.000 PAGE 130

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

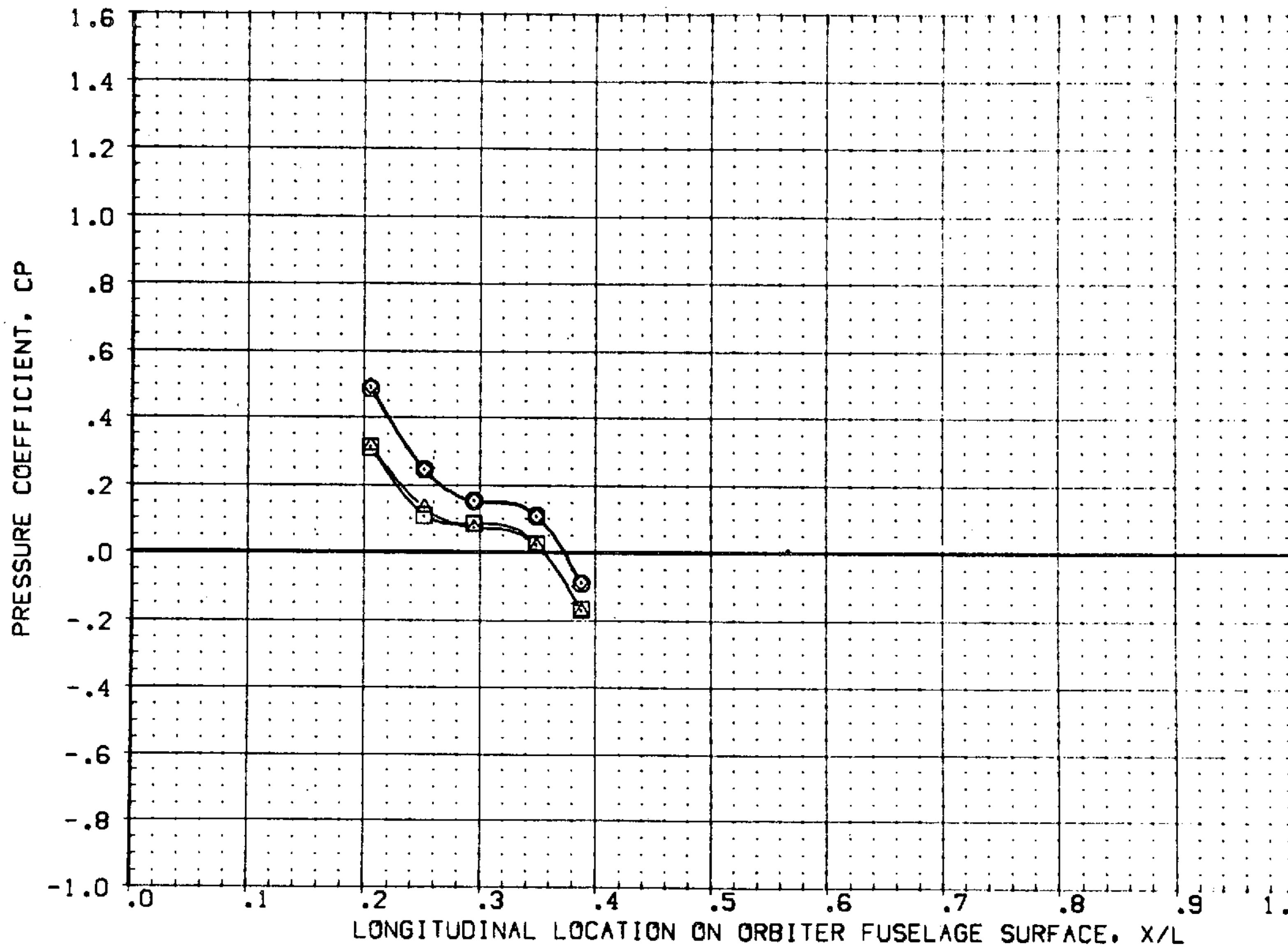


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 01 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

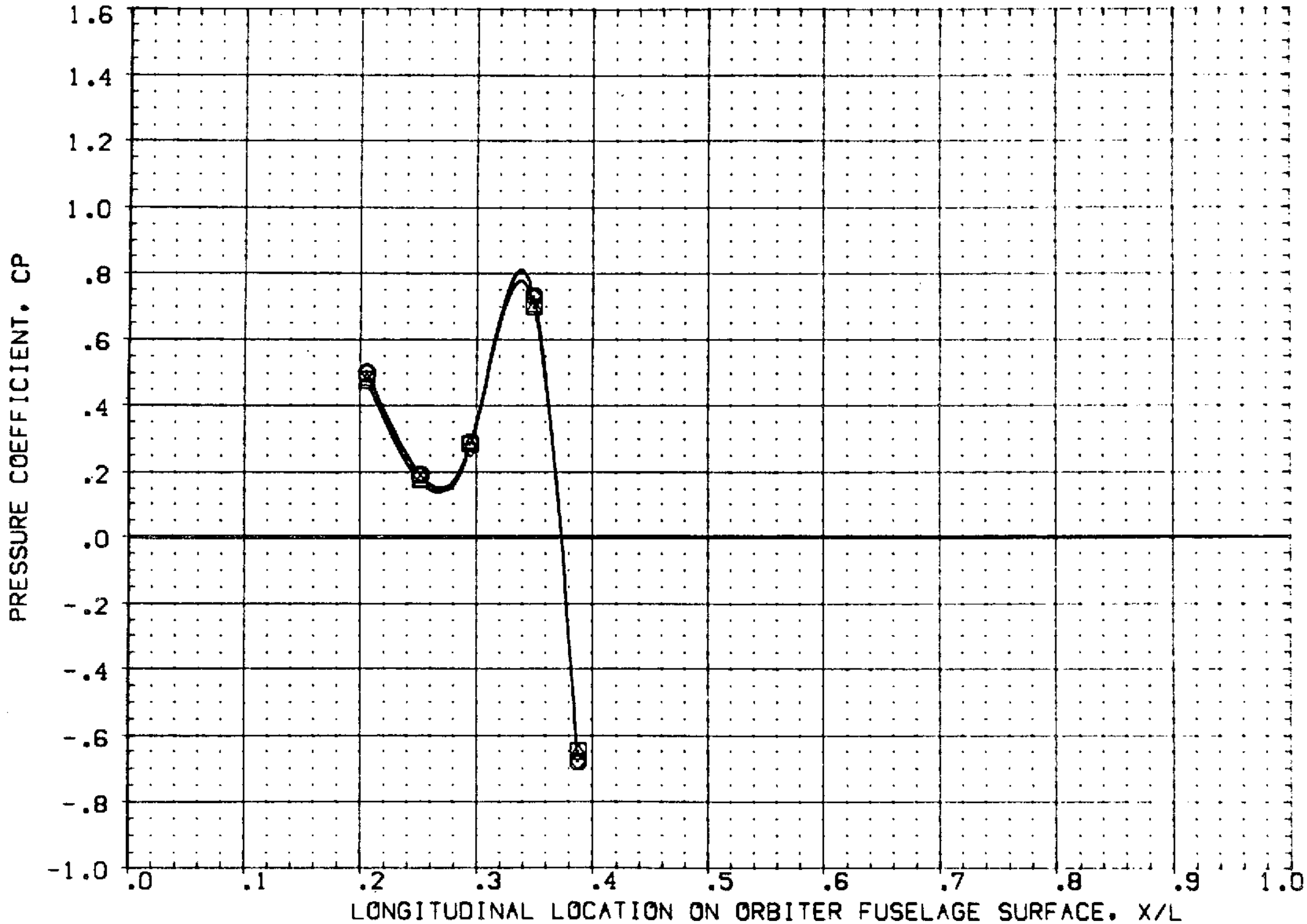


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 PHI = 180.000 PAGE 132

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

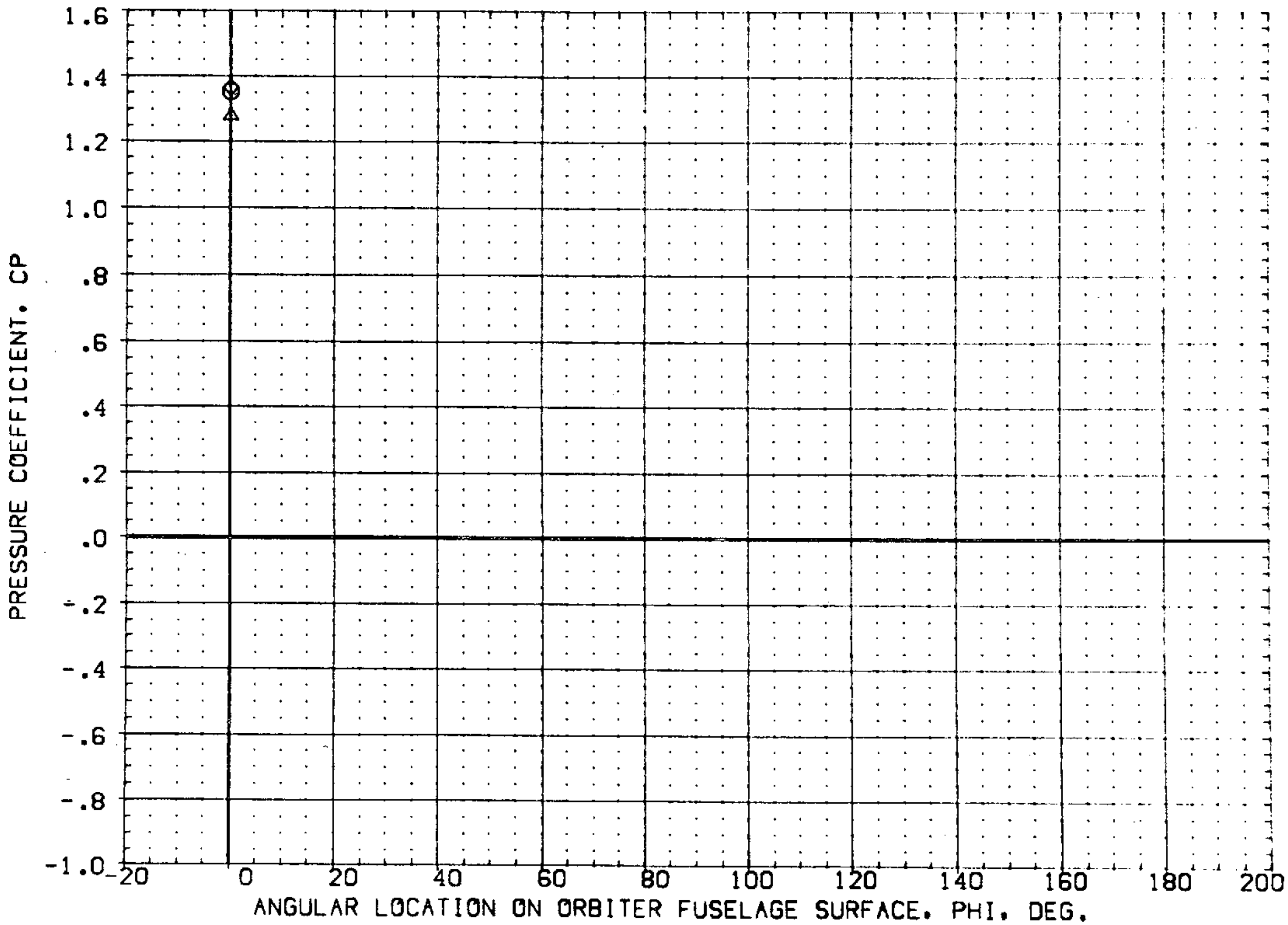


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/L = .182

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	⌶	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

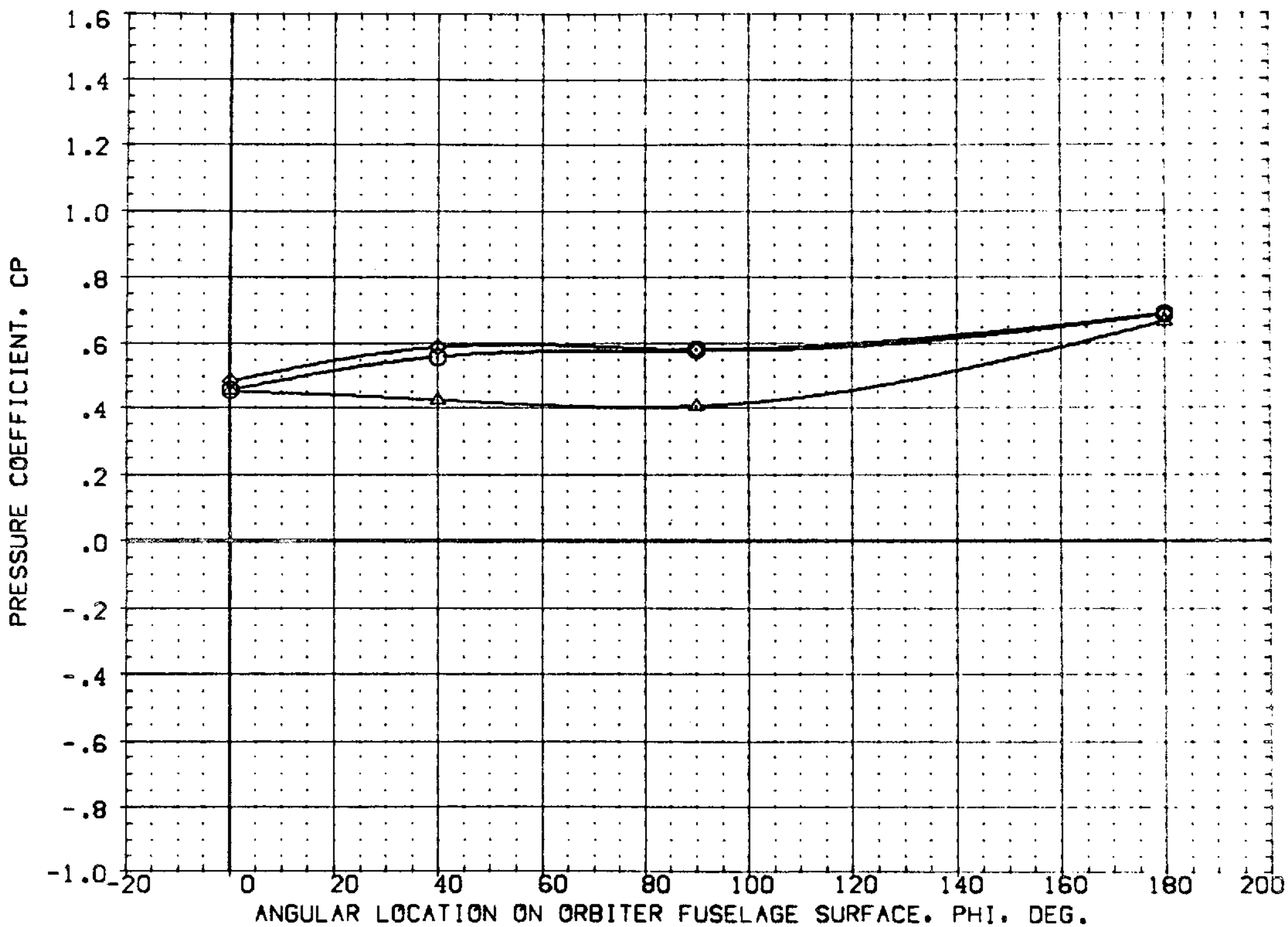


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/L = .205

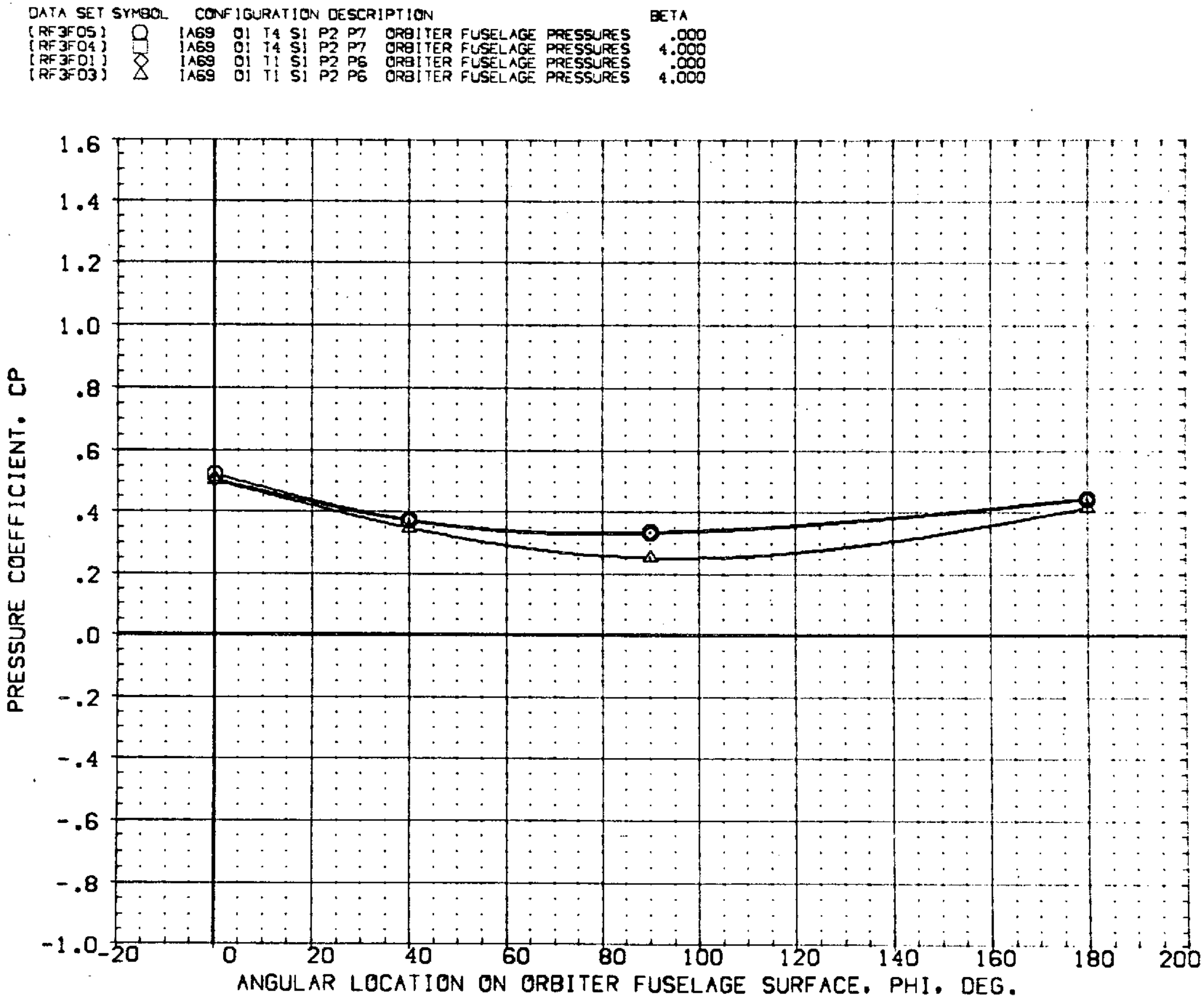


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/L = .252

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

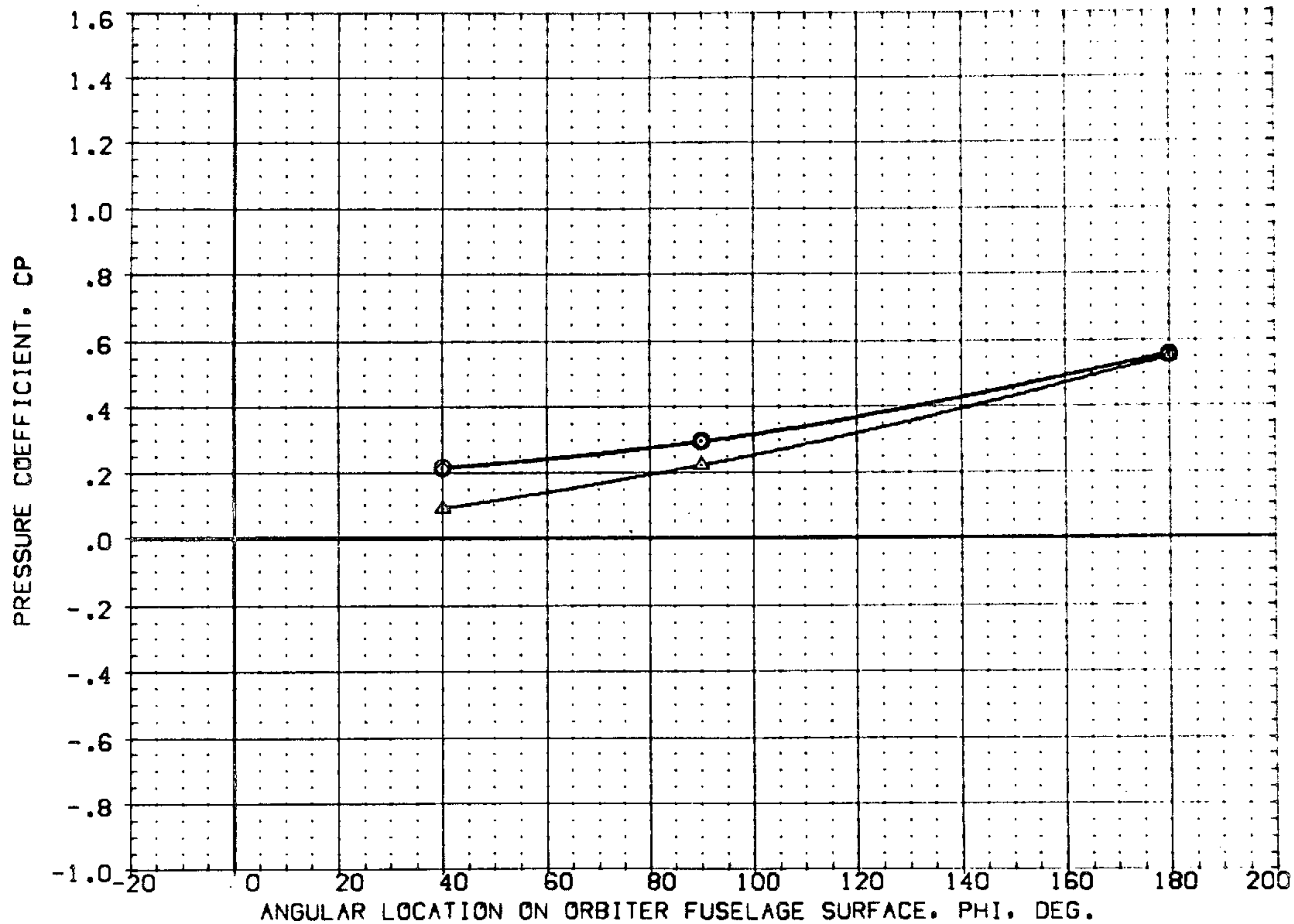


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/L = .295

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

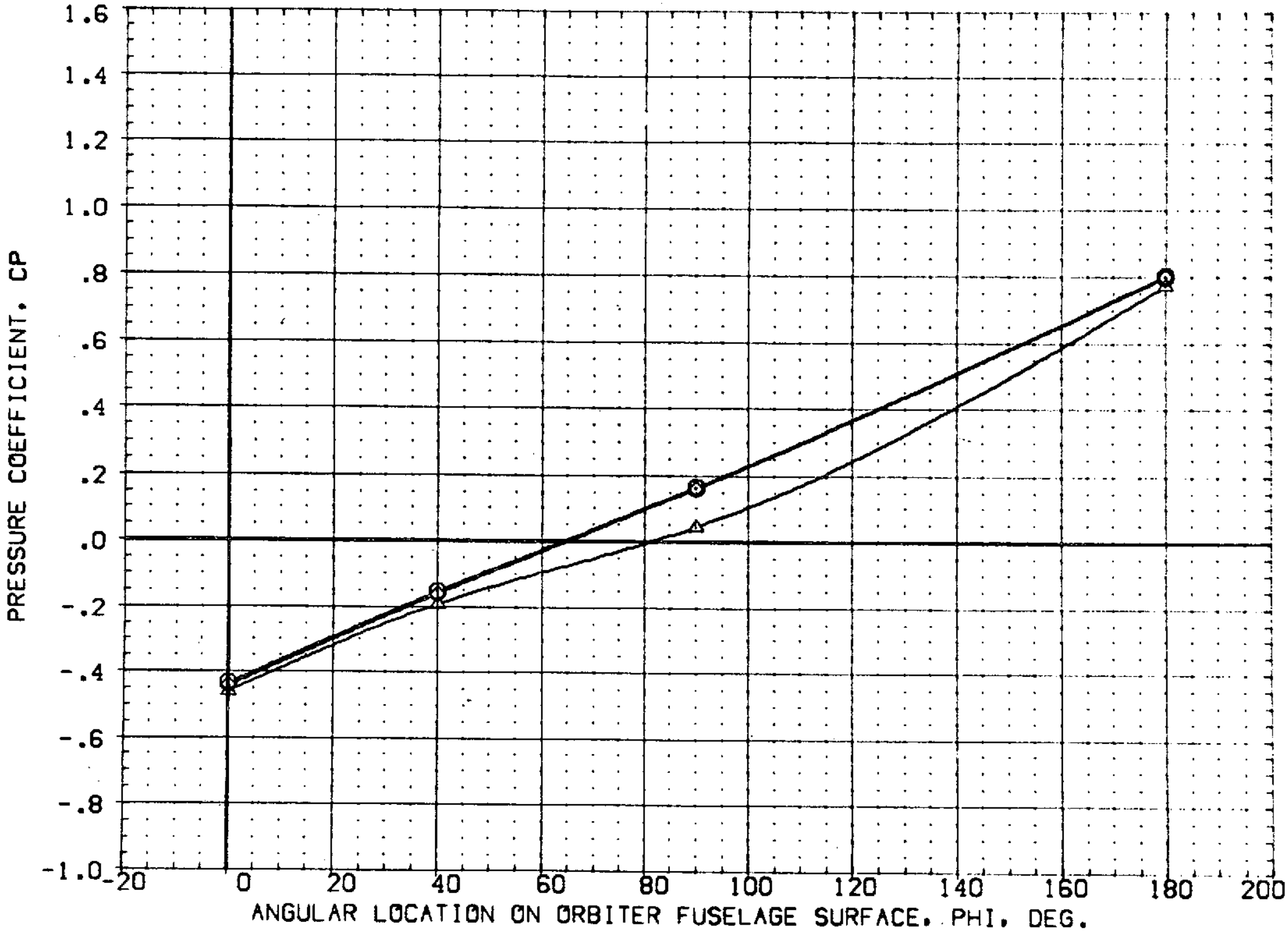


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/L = .349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

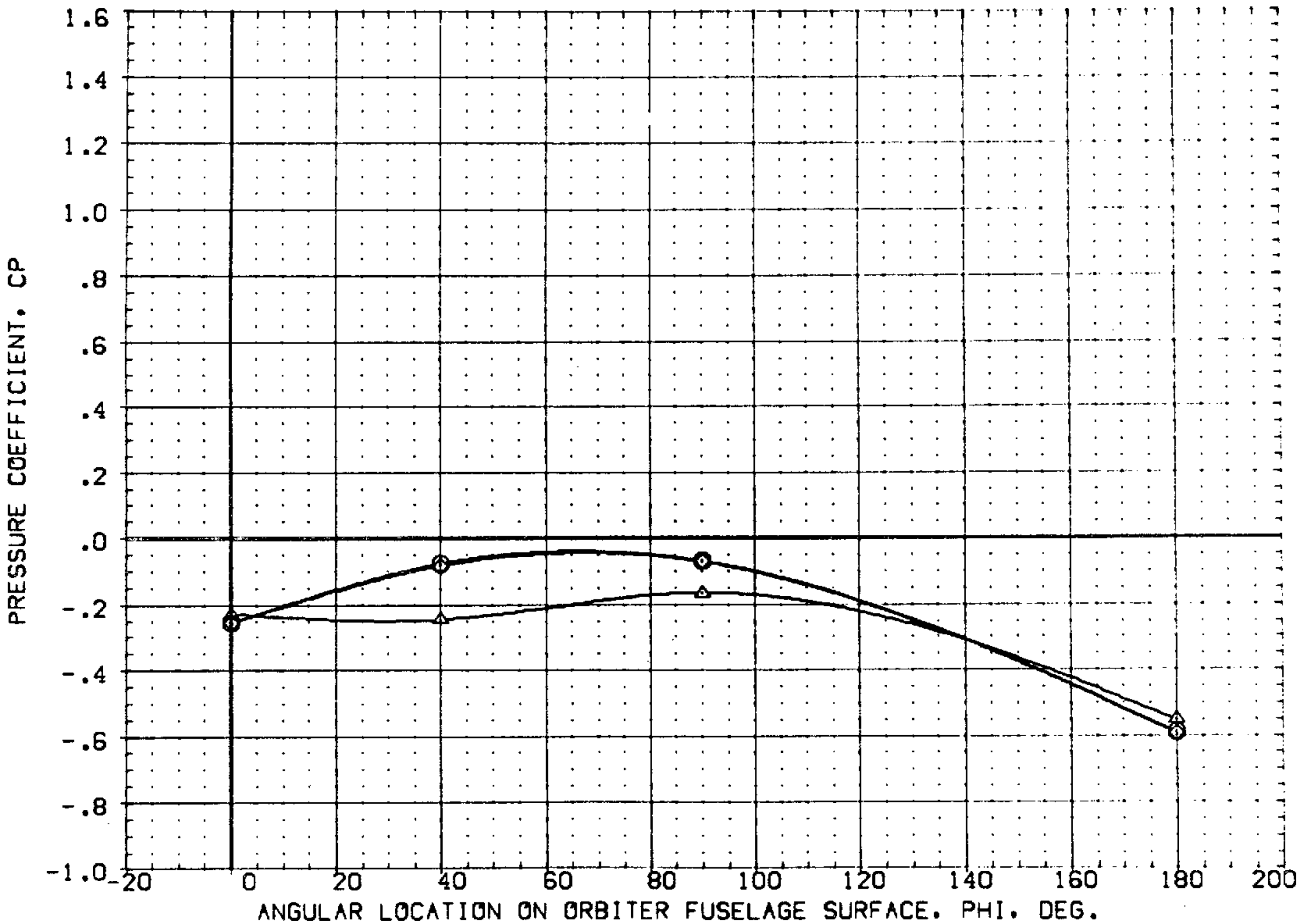


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = -4.000 X/L = .388

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

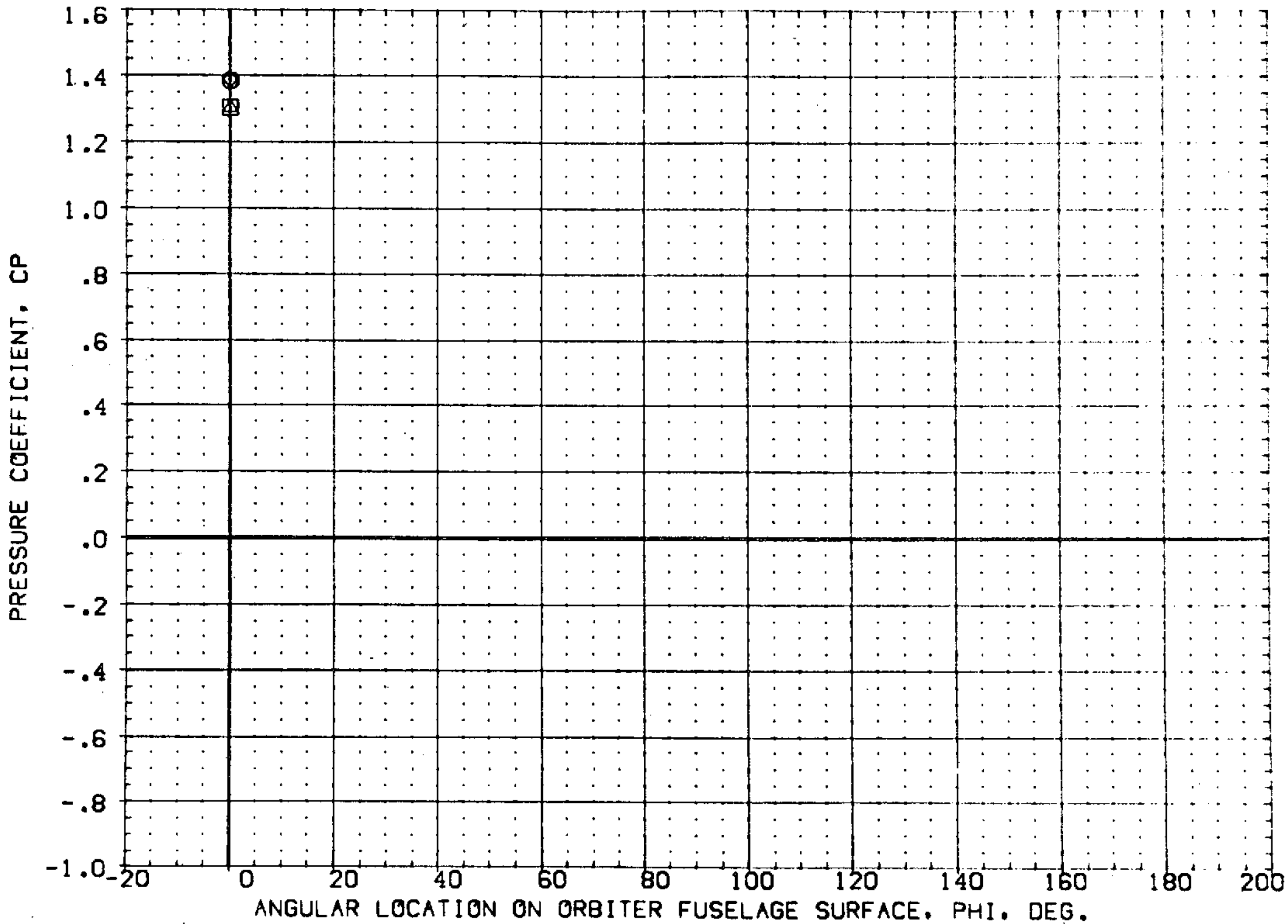


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/L = .182

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

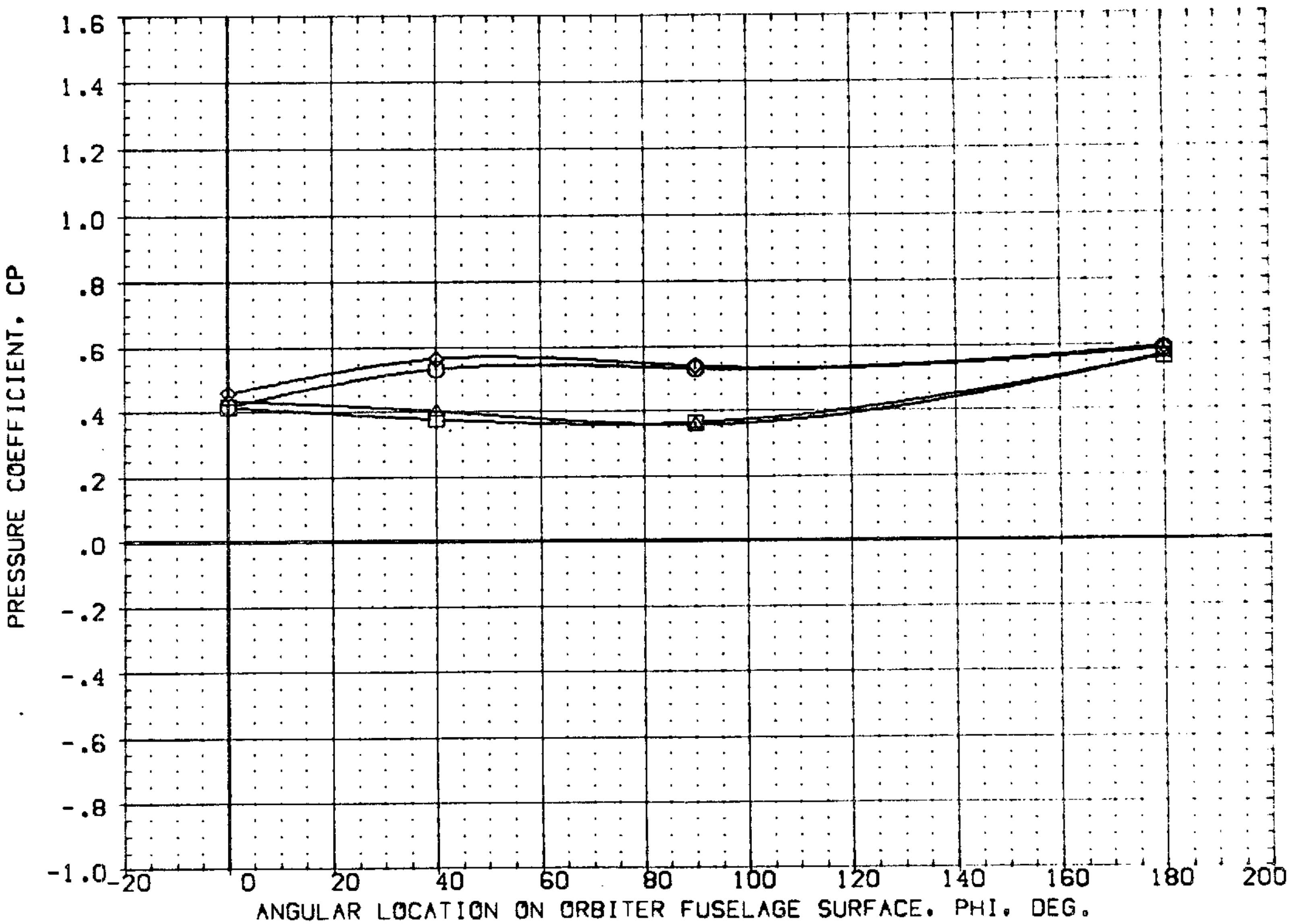


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/L = .205

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

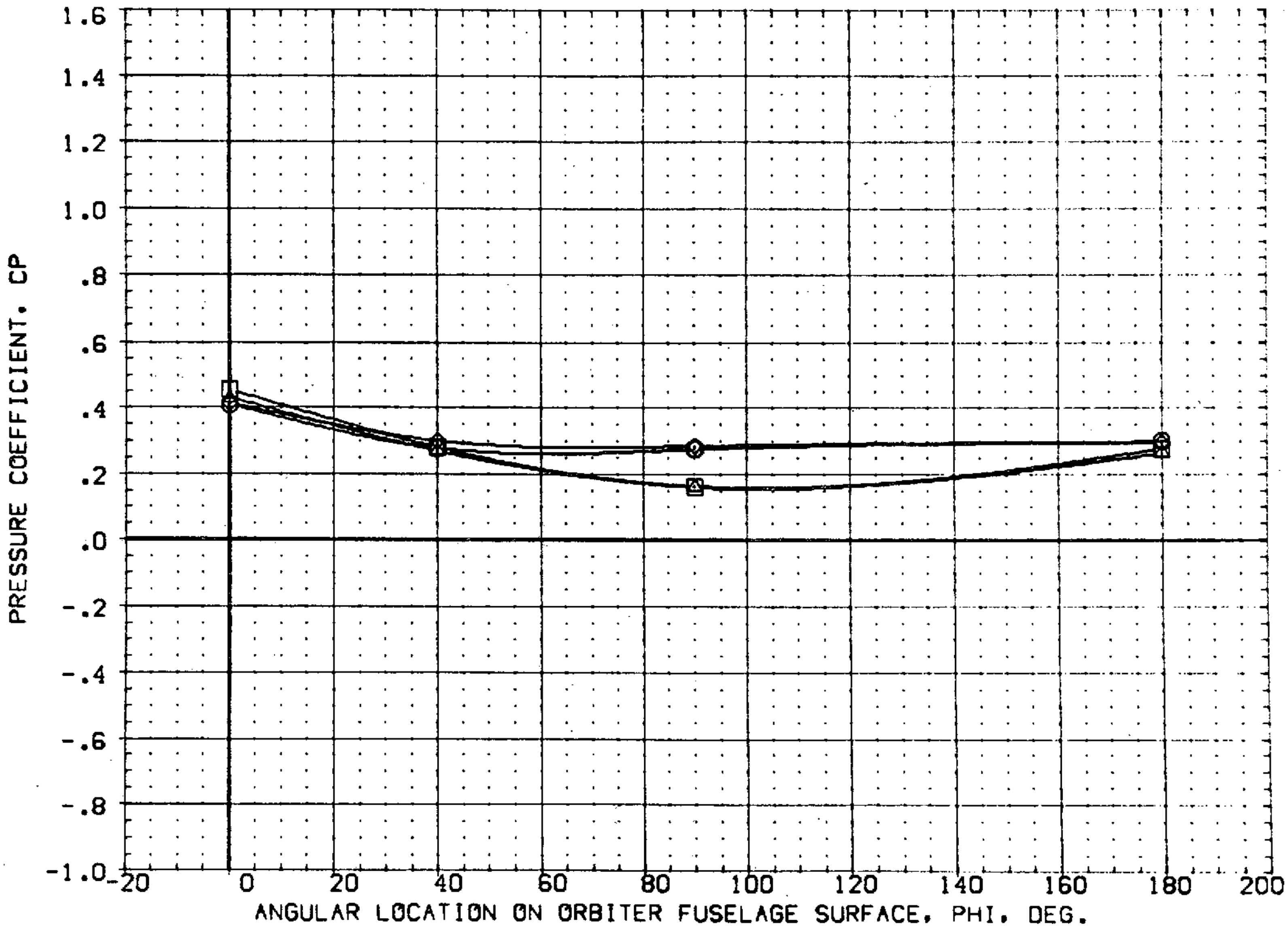


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/L = .252

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

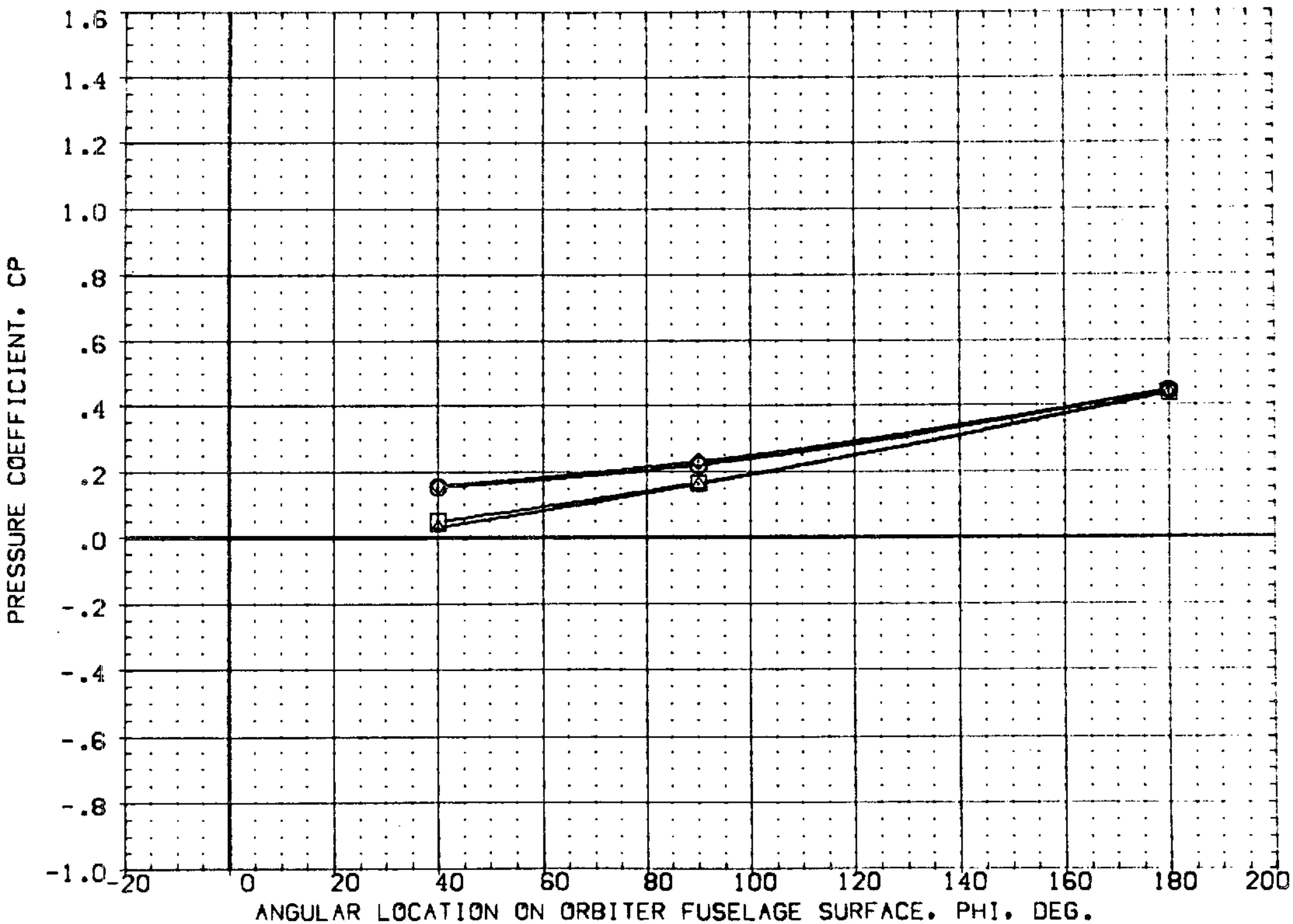


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/L = .295

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	⧖	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

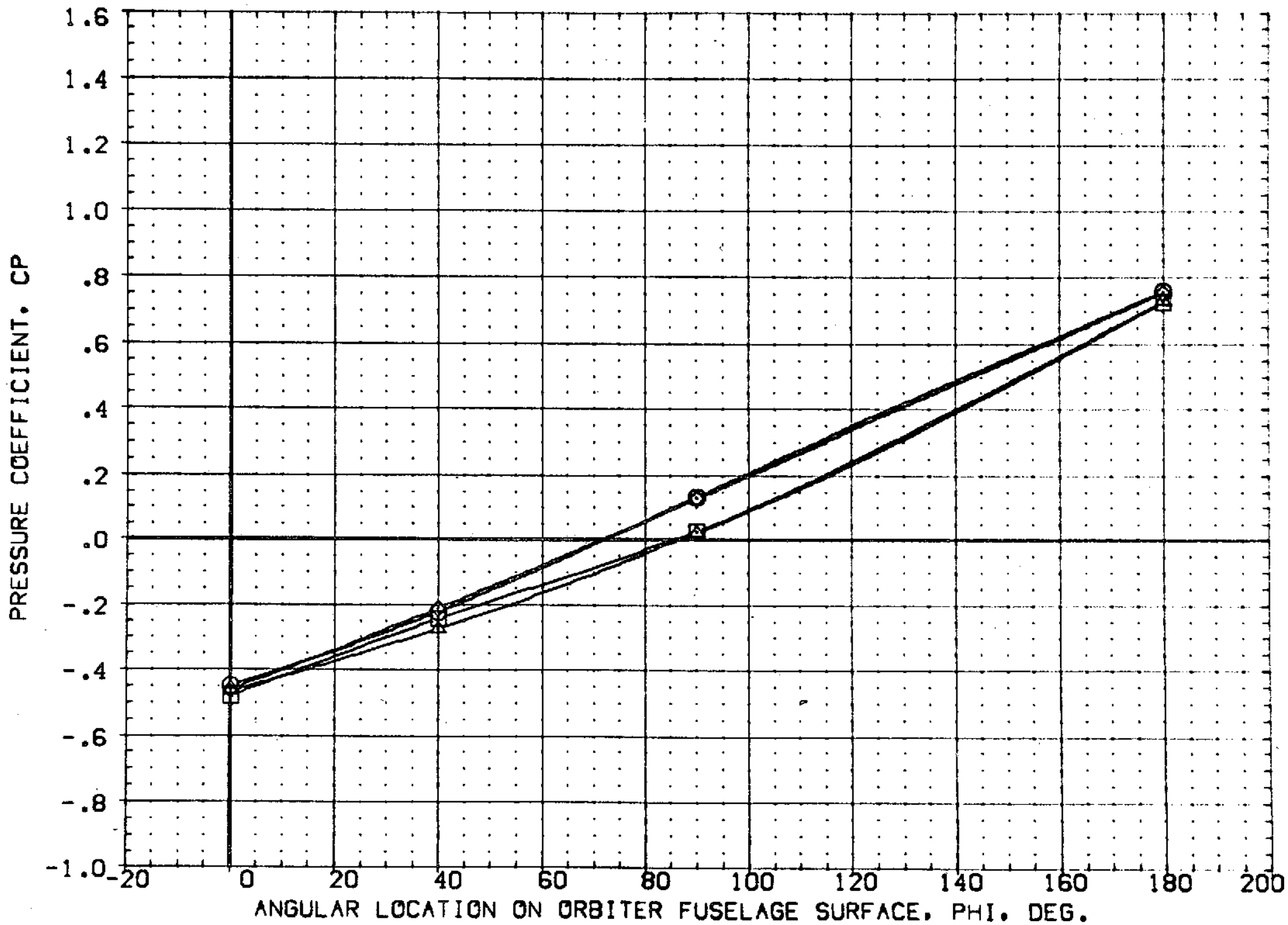


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/L = .349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

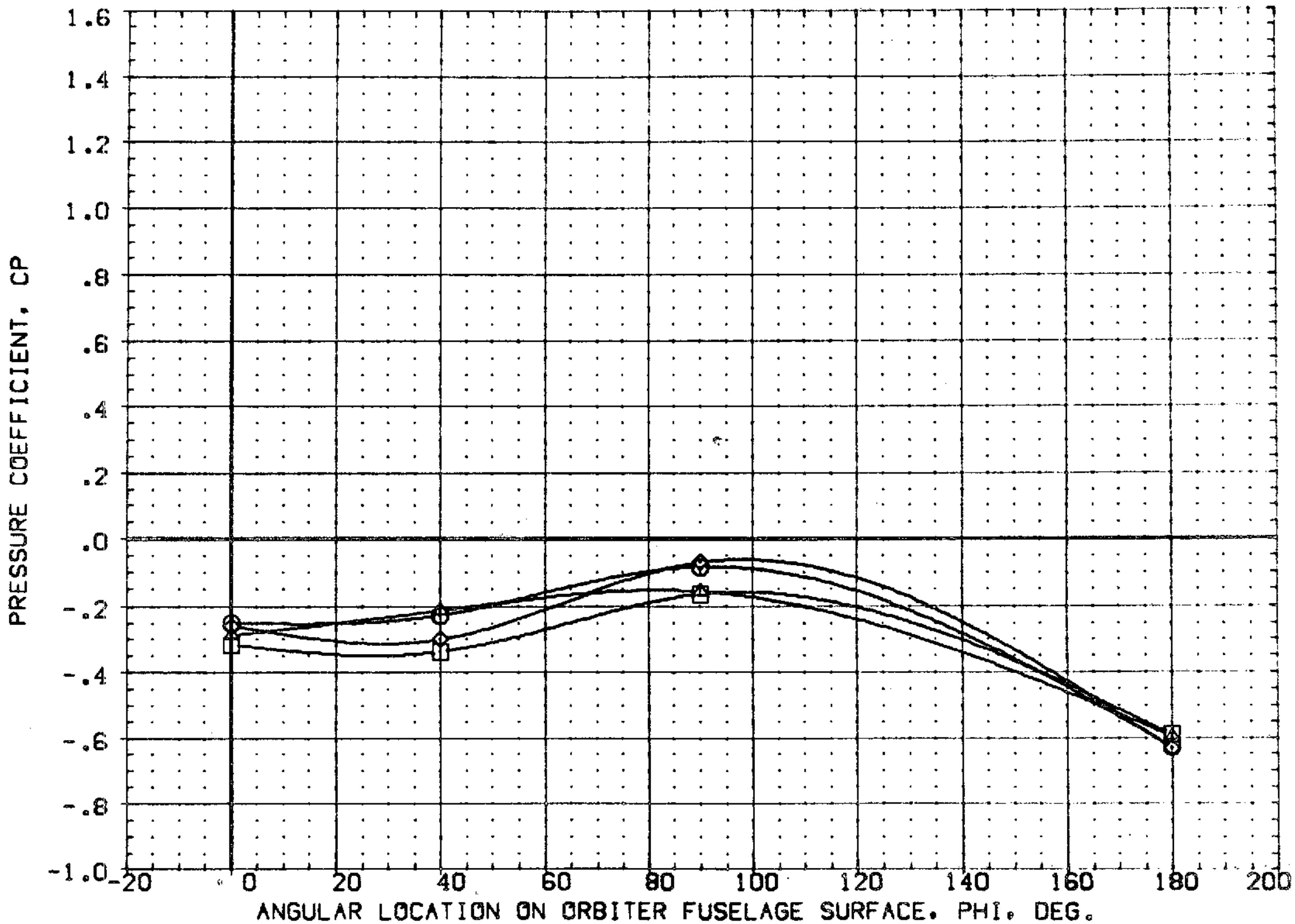


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = .000 X/L = .388

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

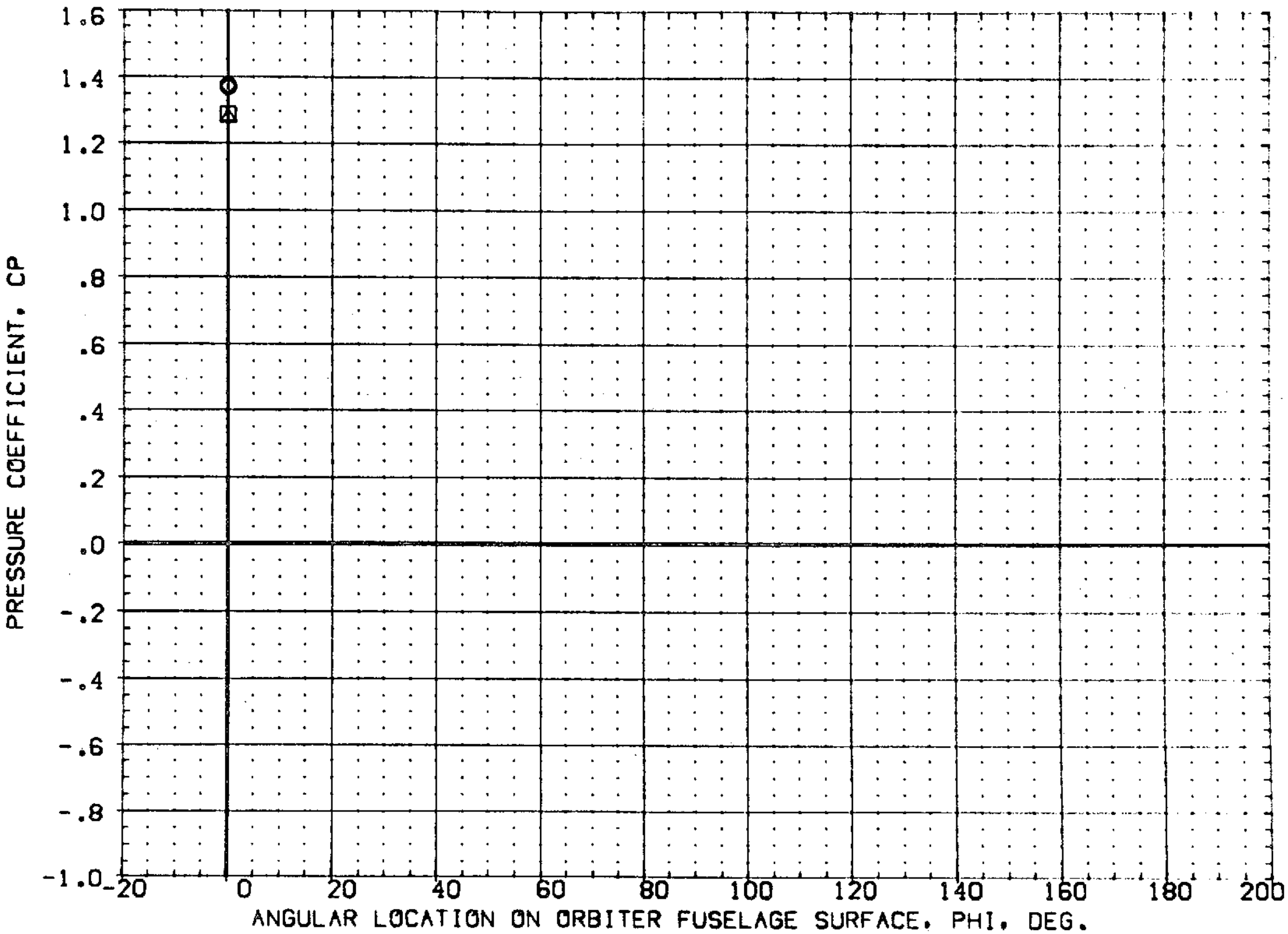


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/L = .182

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

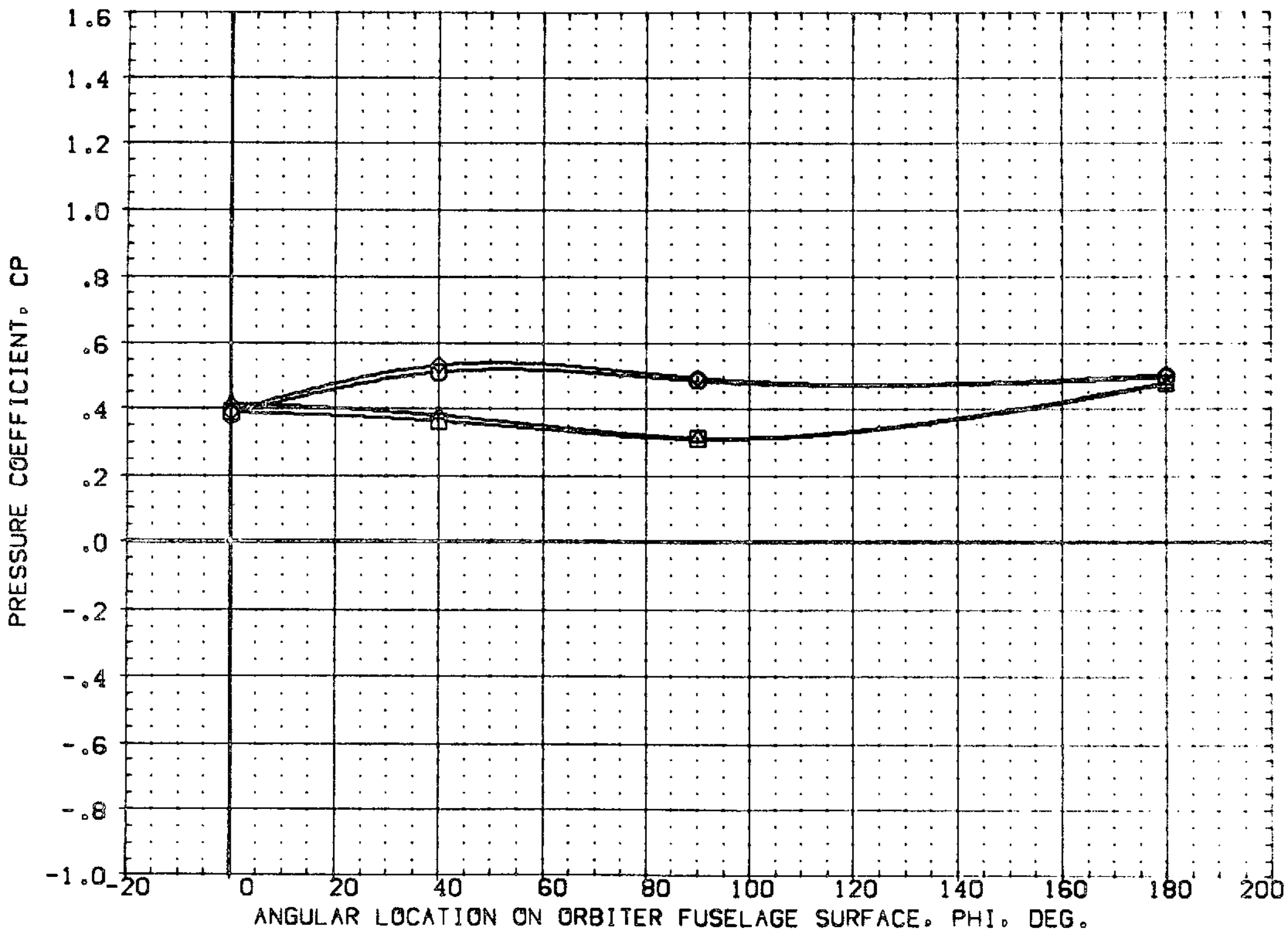


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/L = .205

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

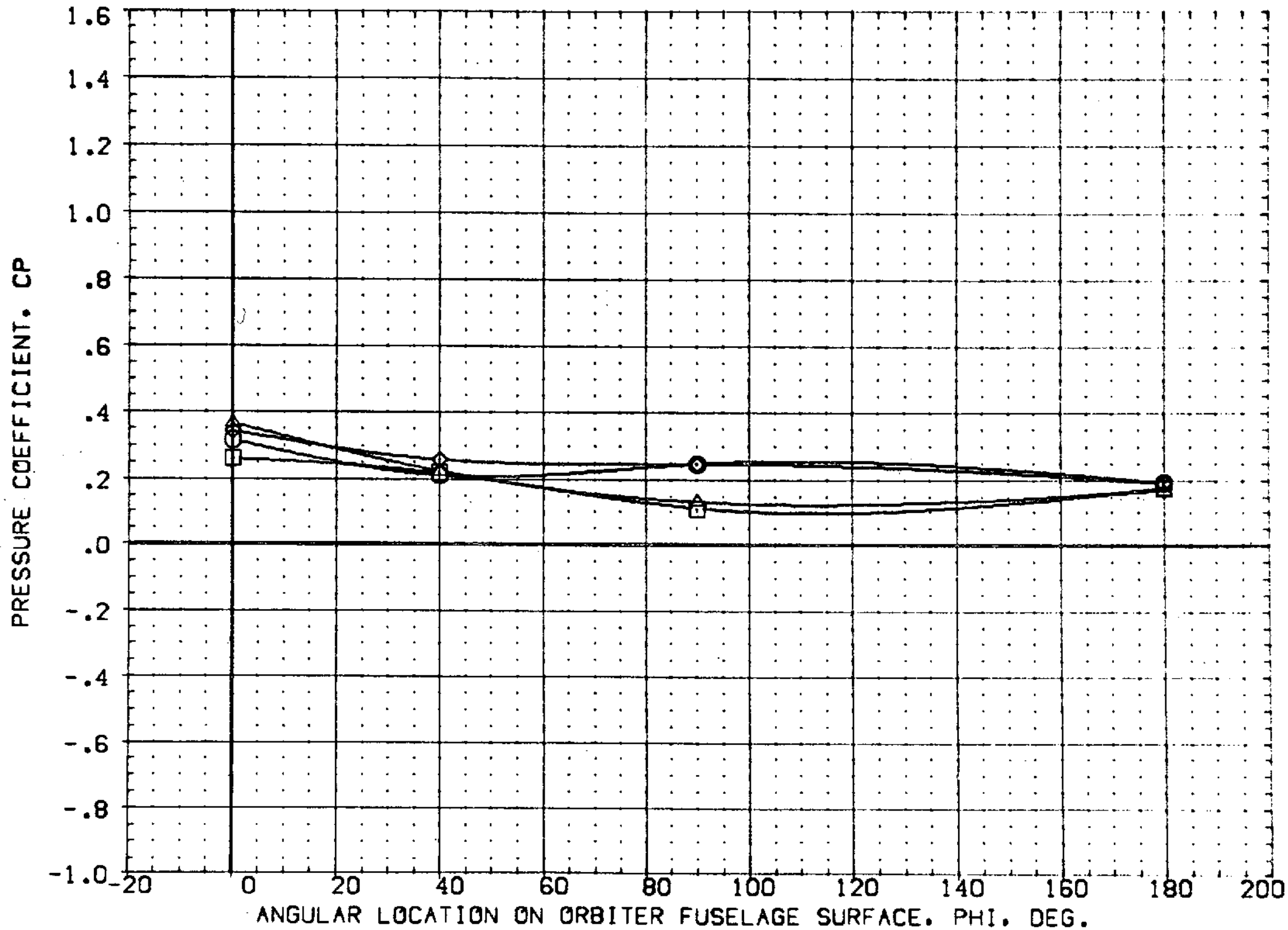


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/L = .252

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

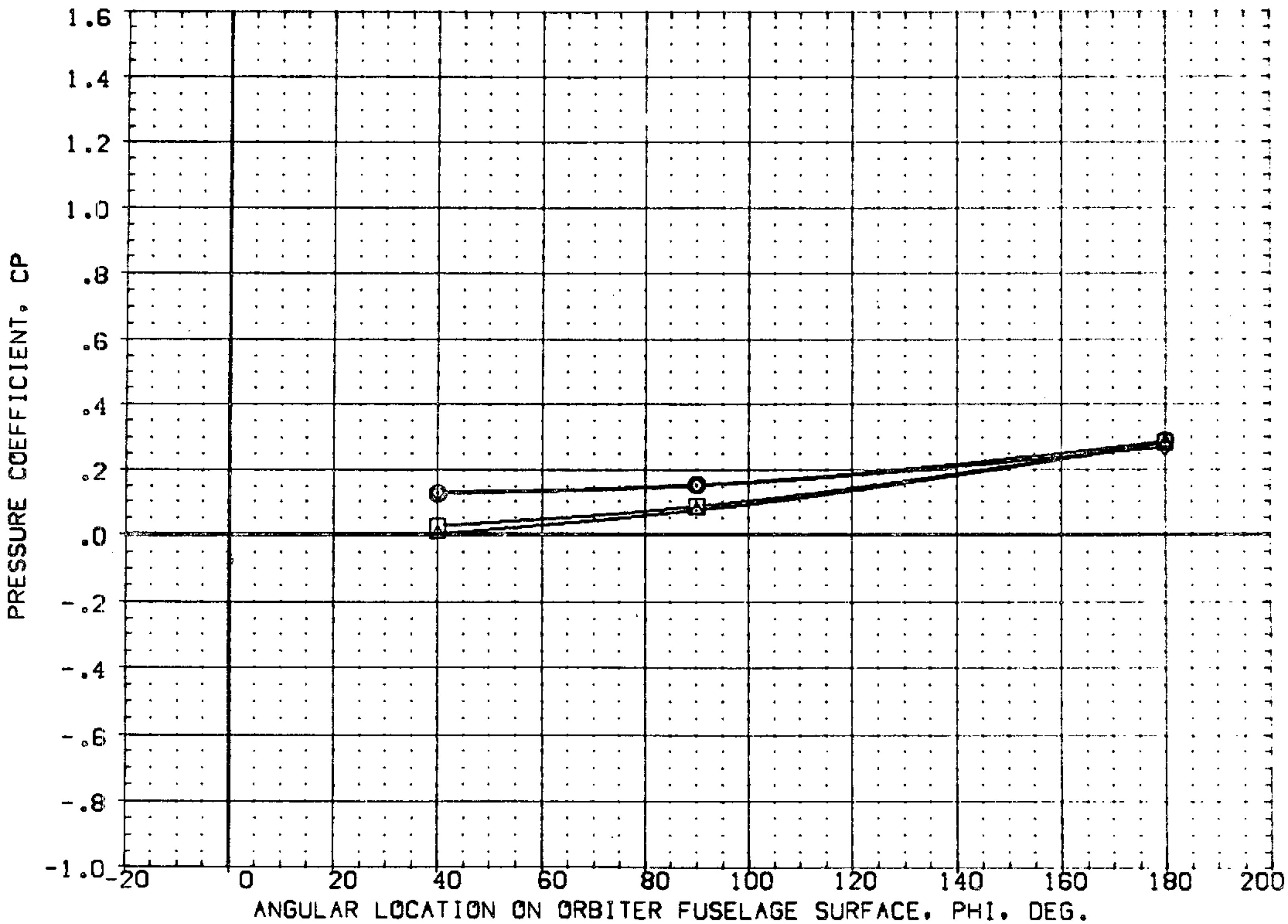


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/L = .295

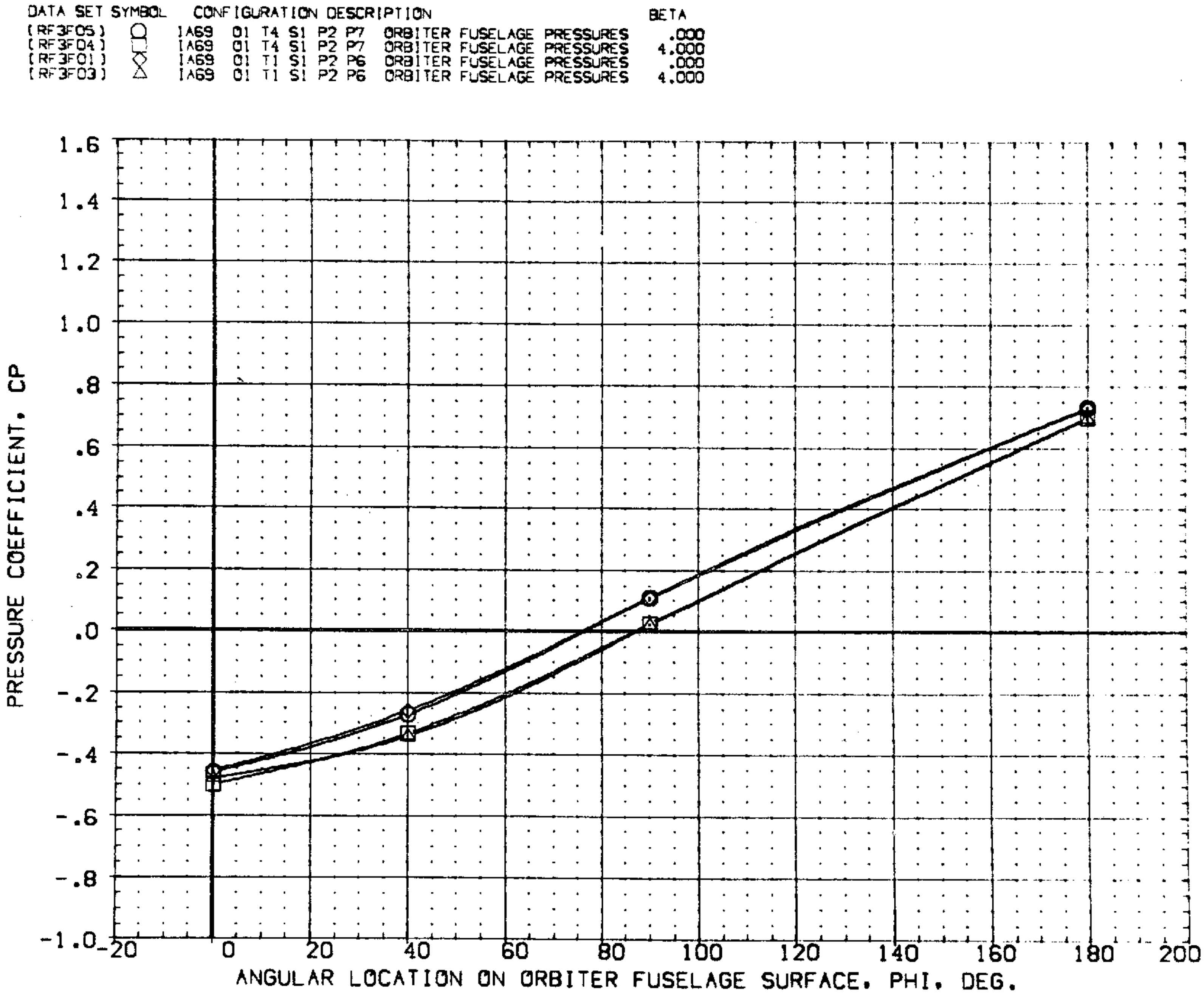


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/L = .349

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(RF3F05)	○	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	.000
(RF3F04)	□	IA69 O1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES	4.000
(RF3F01)	◇	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.000
(RF3F03)	△	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	4.000

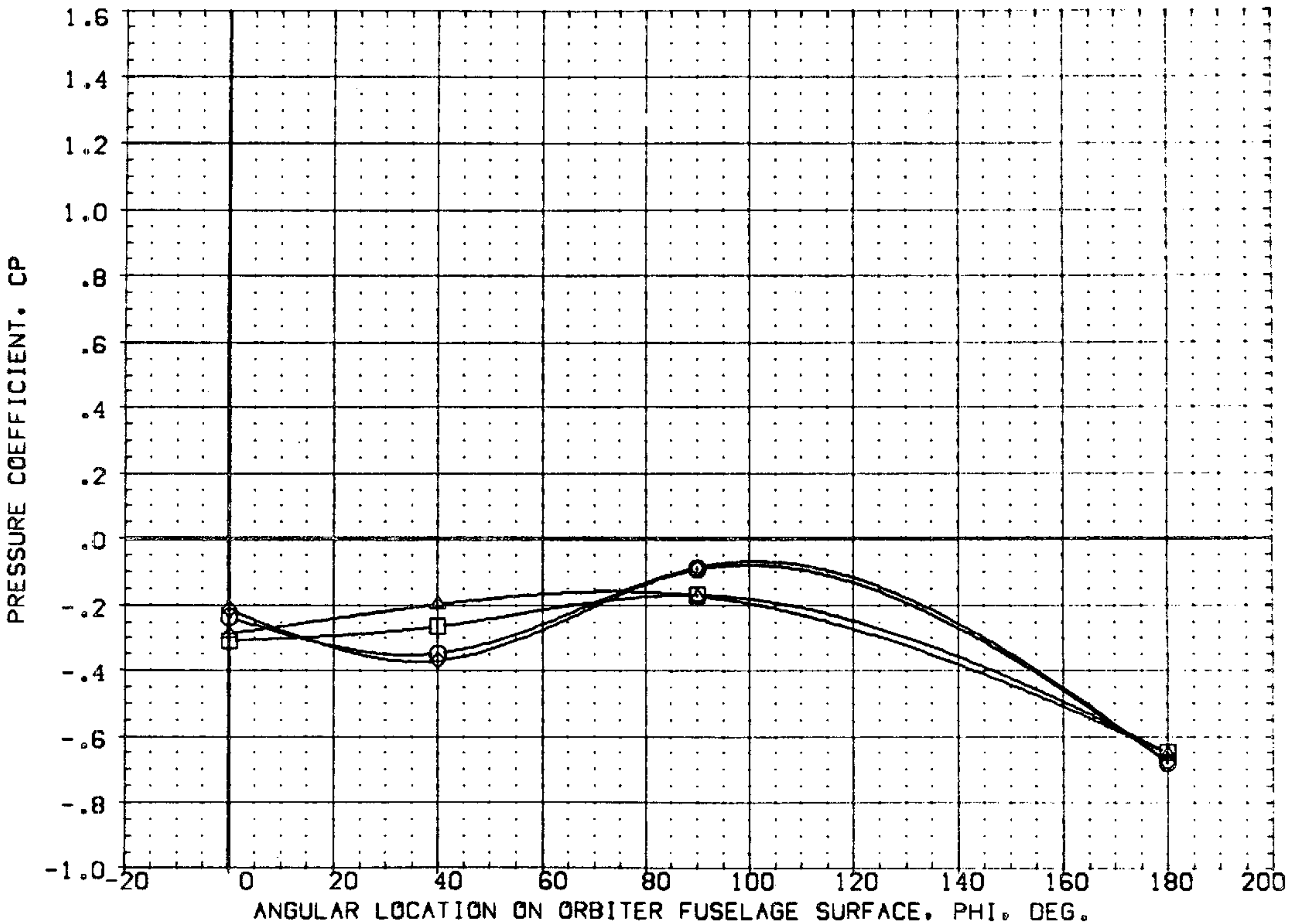


FIG 8 EFFECT OF EXTERNAL TANK NOSE CONFIG ON ORBITER PRESSURES, BETA = 0, +4

MACH = 1.200 ALPHA = 4.000 X/L = .388

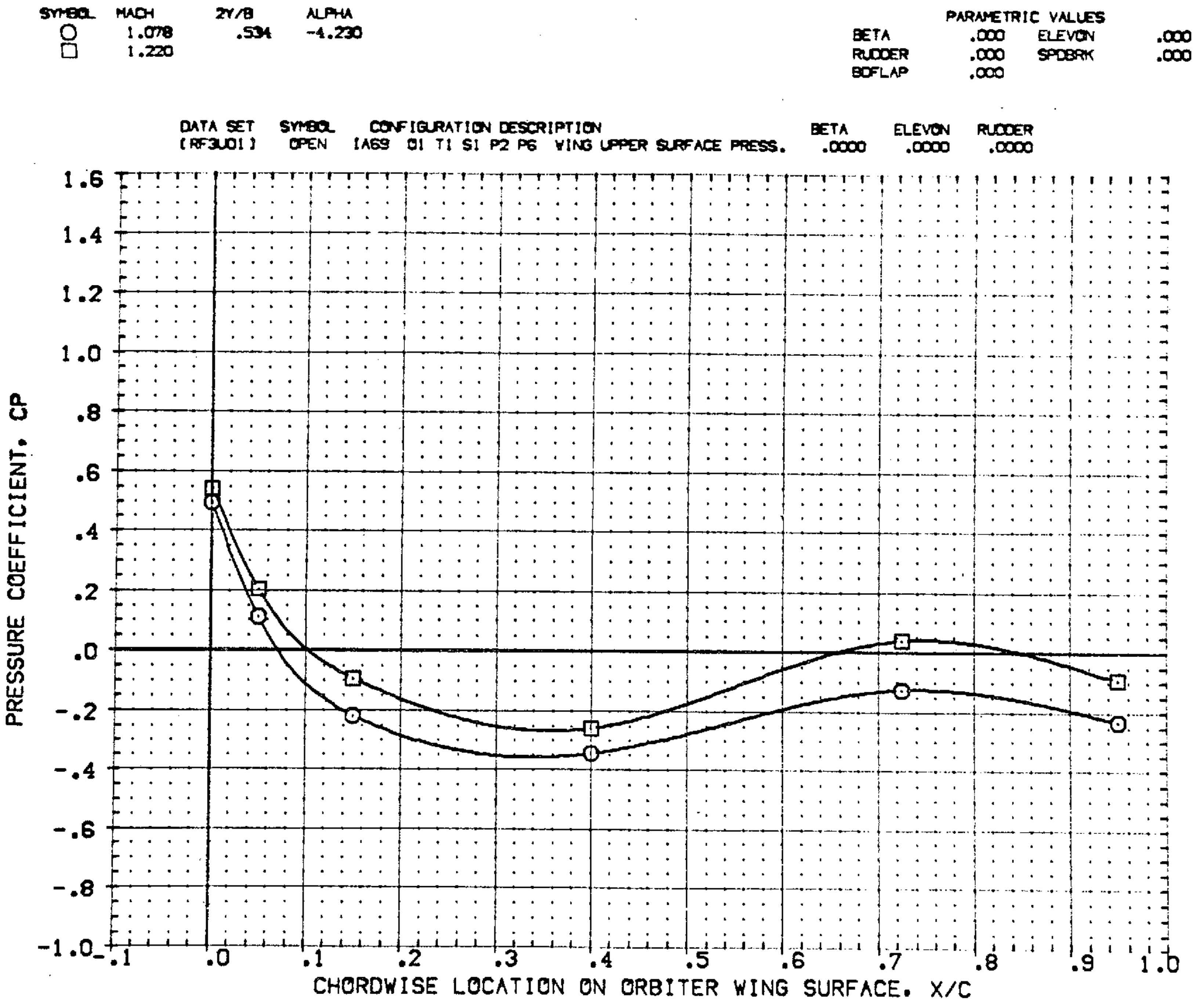


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	2Y/B	ALPHA
○	1.078	.780	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

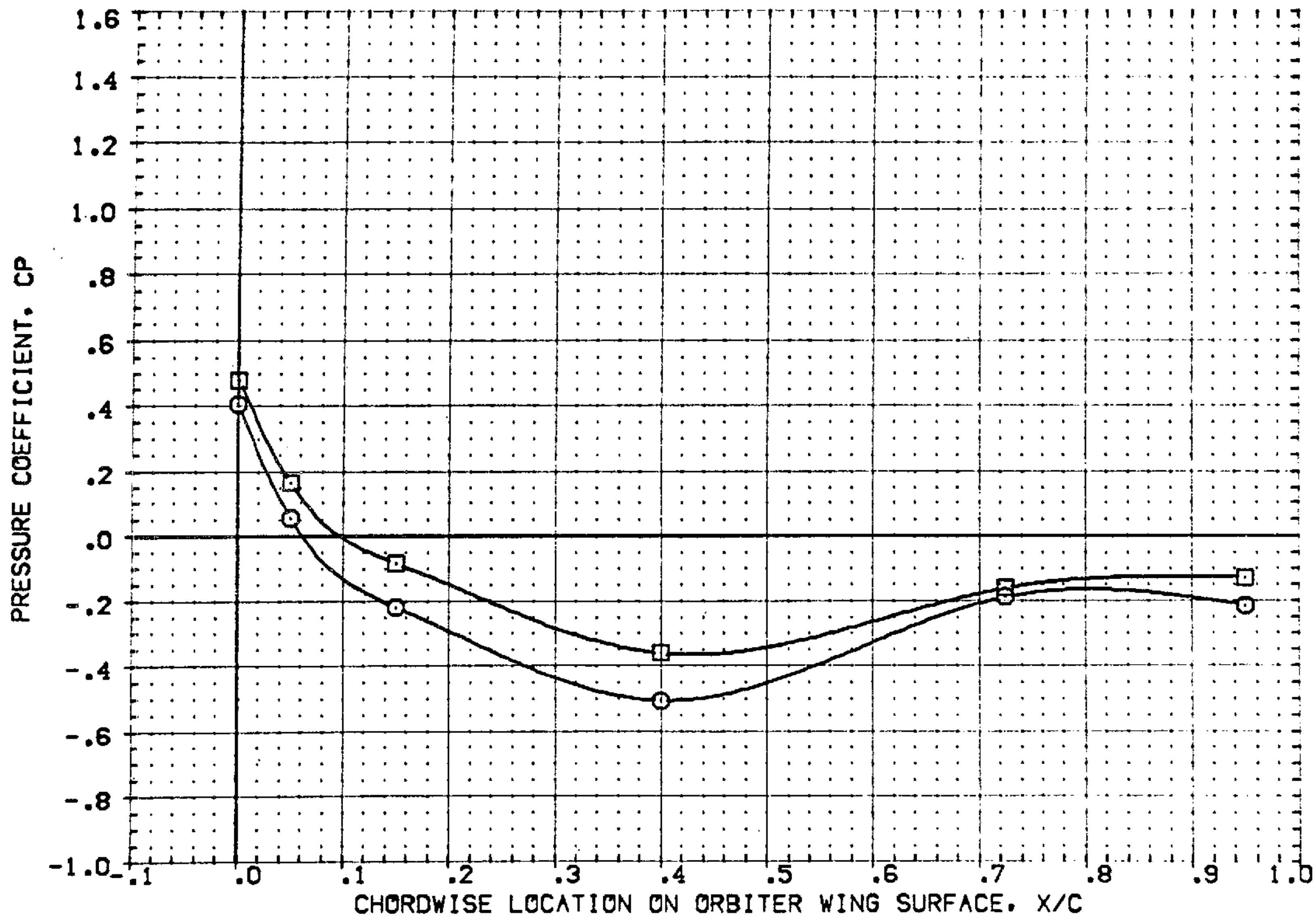


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

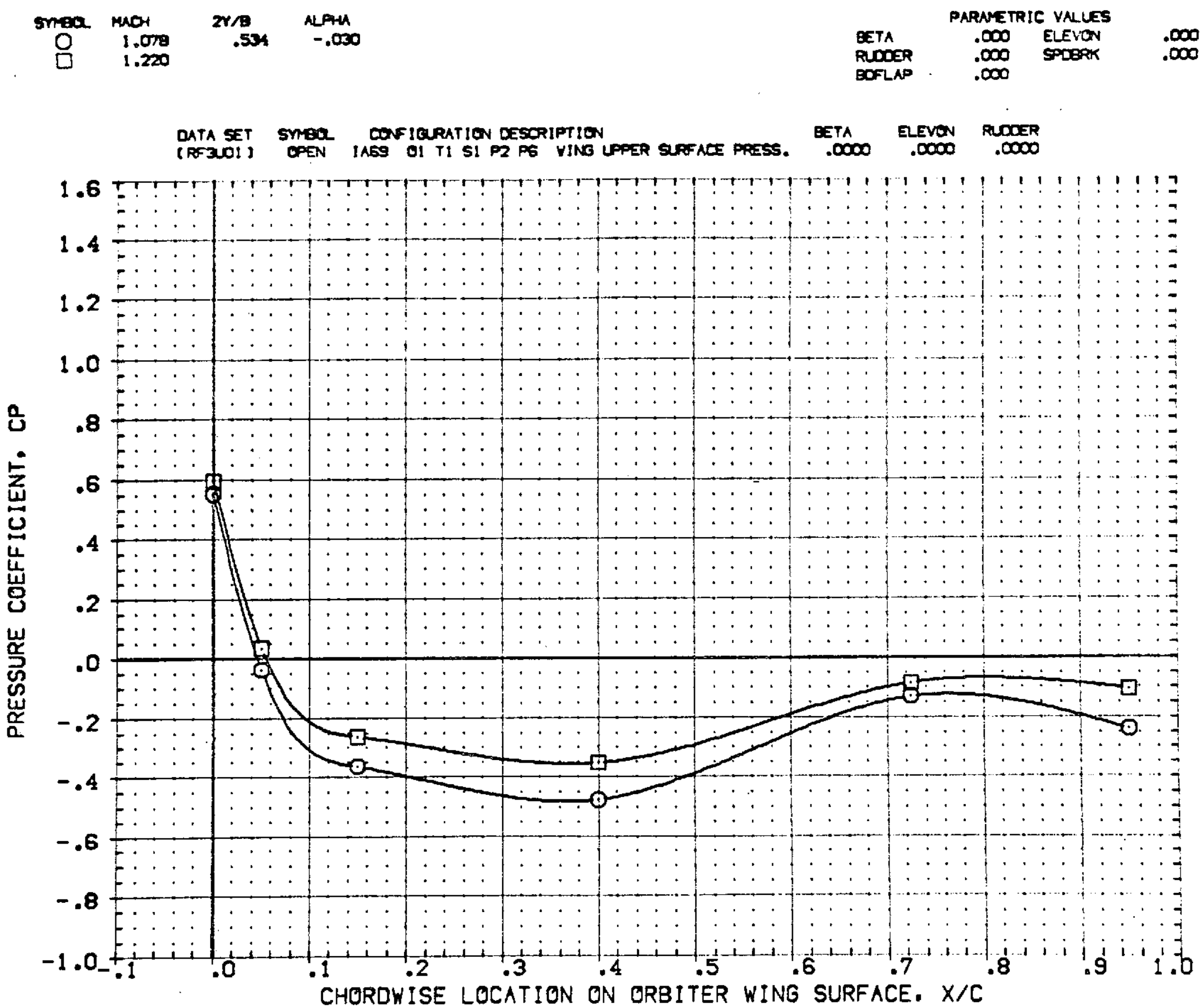


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

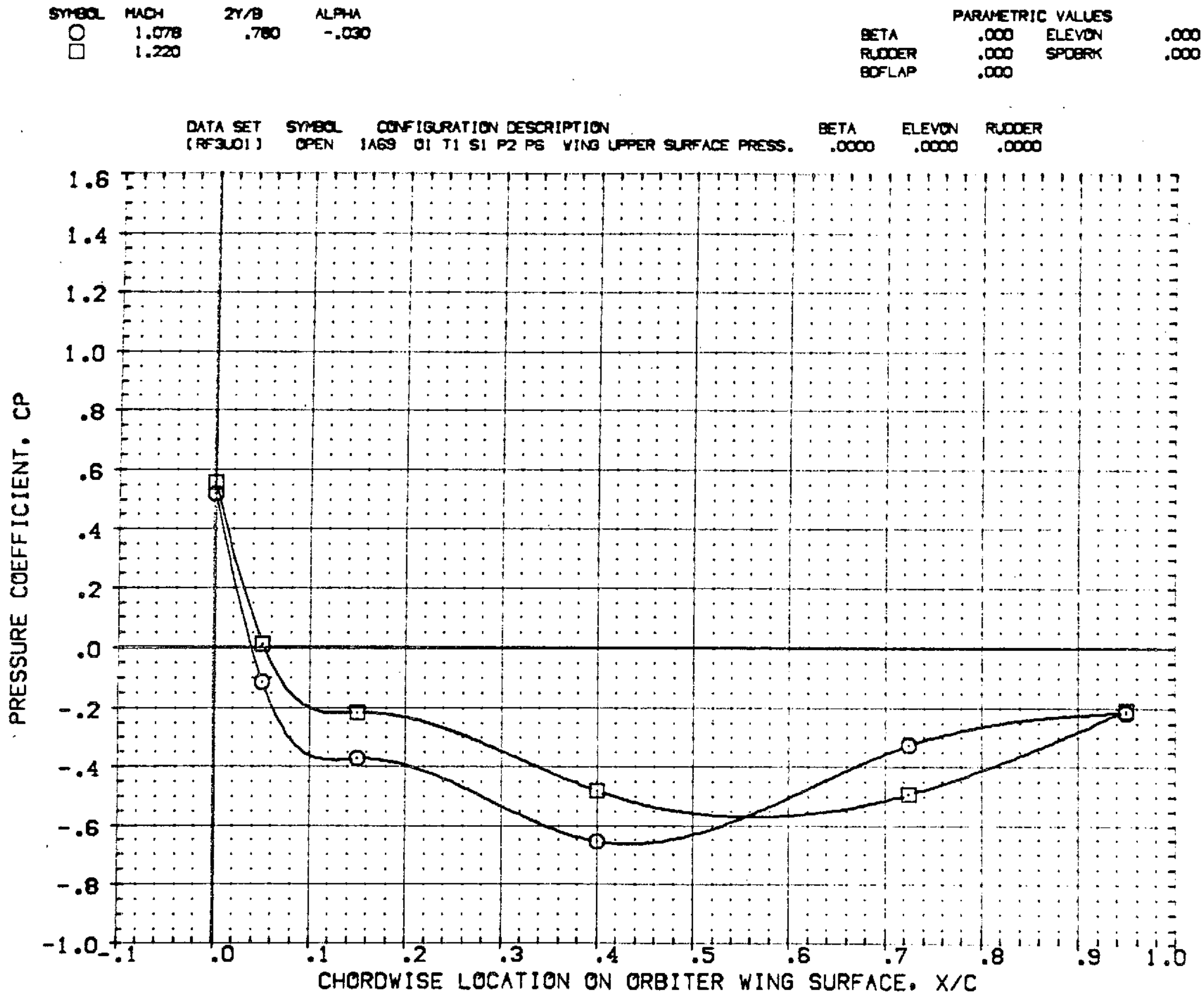


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

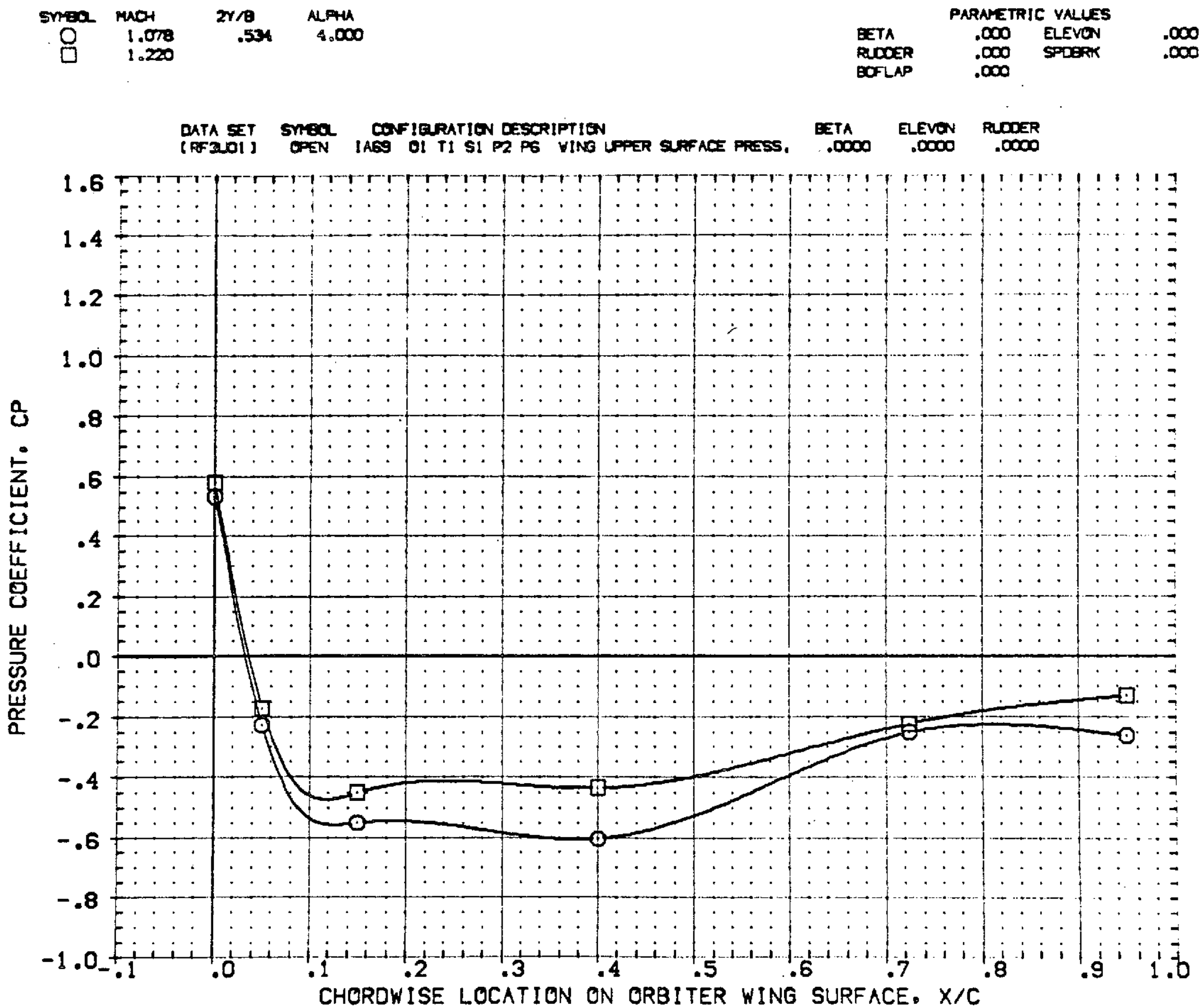


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

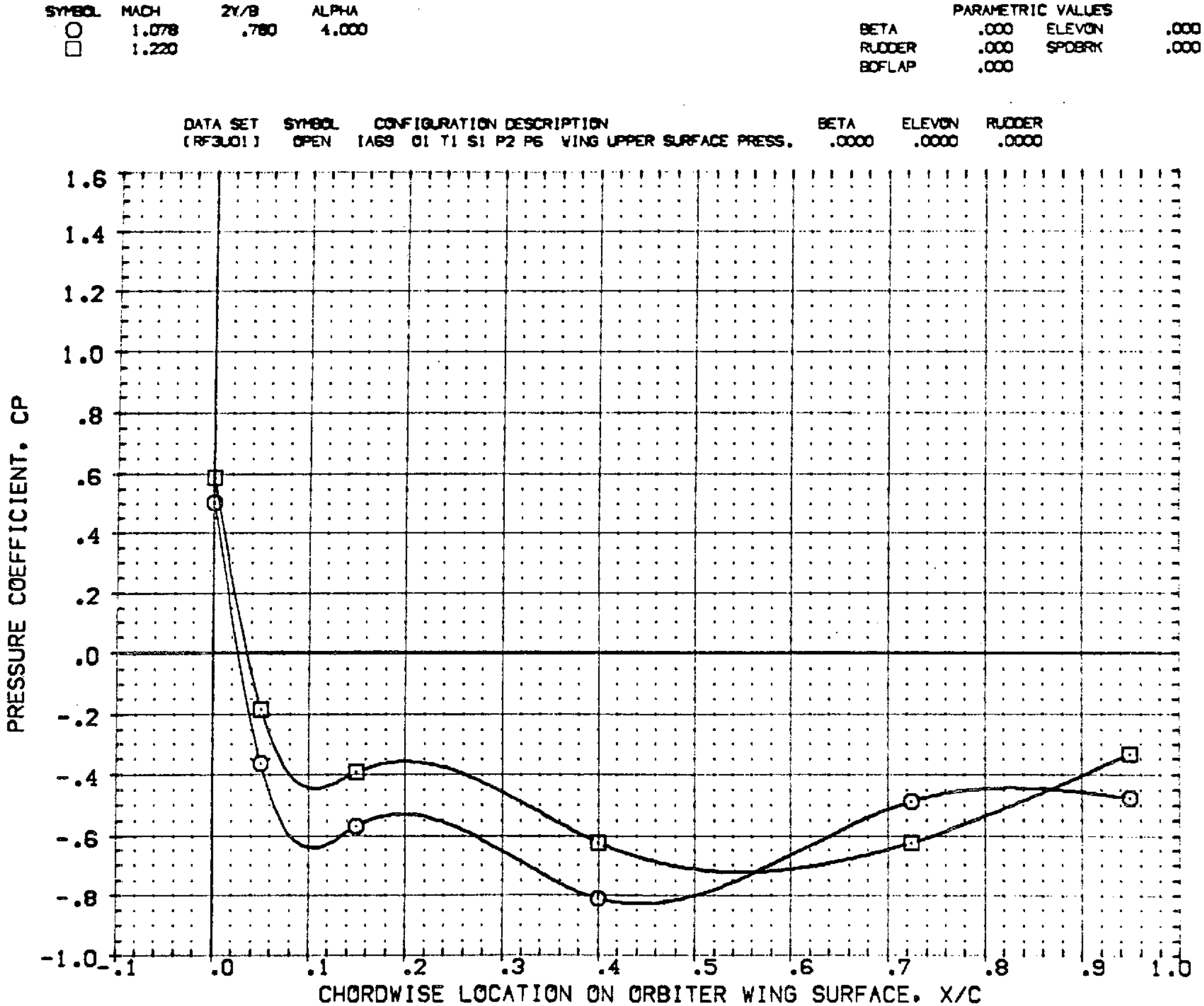


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.000	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3UD1)	OPEN	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

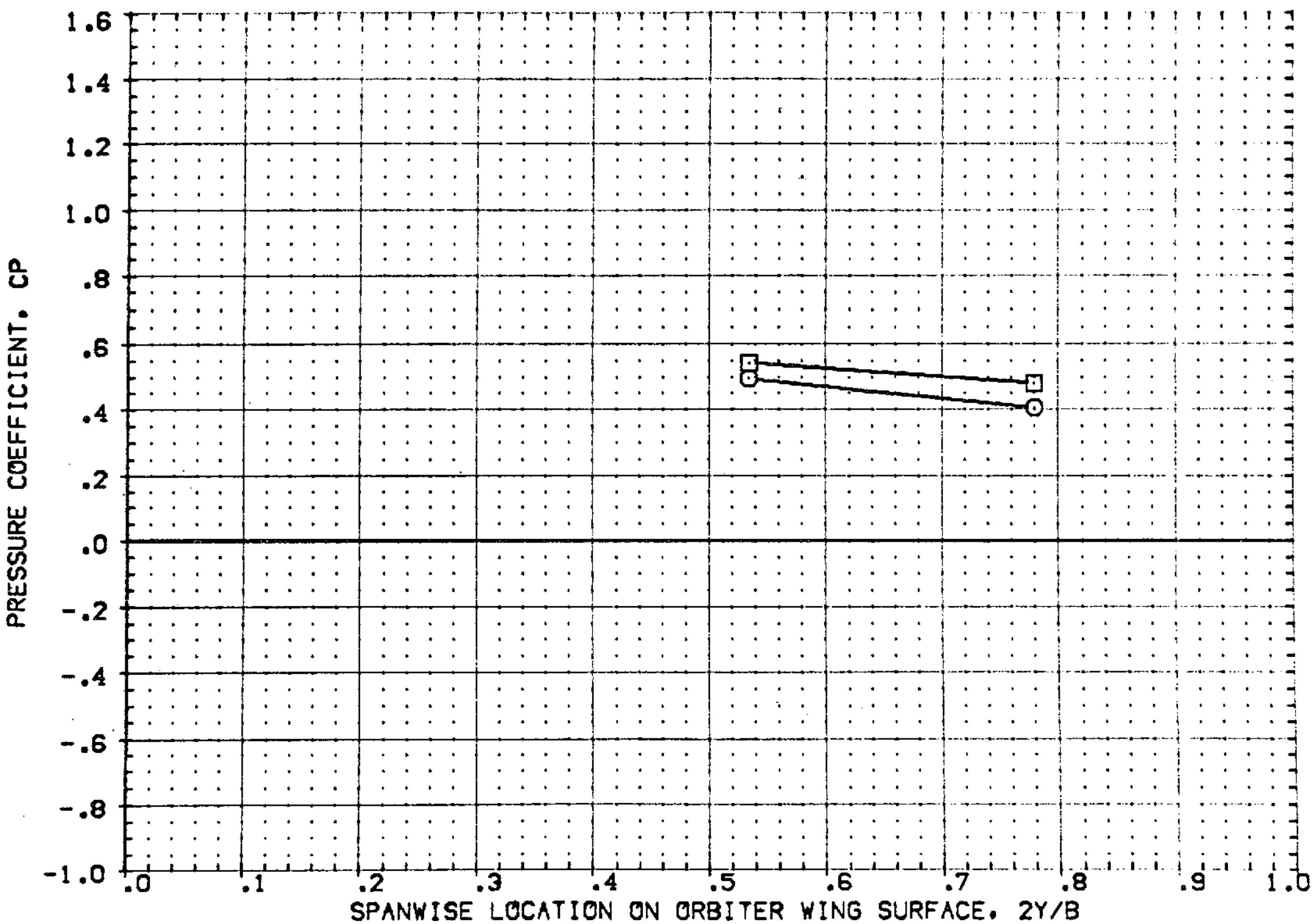


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.050	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

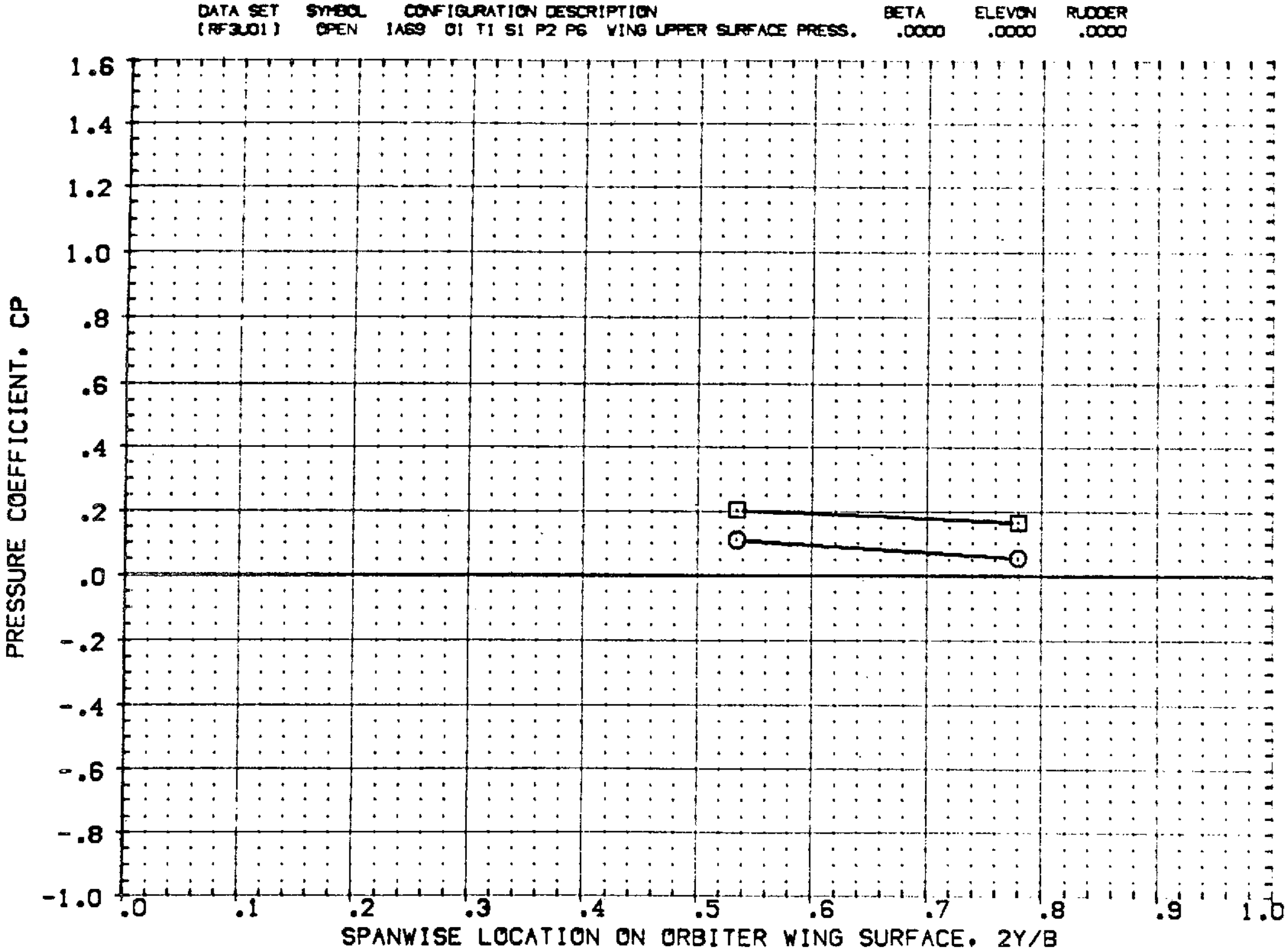


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.150	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

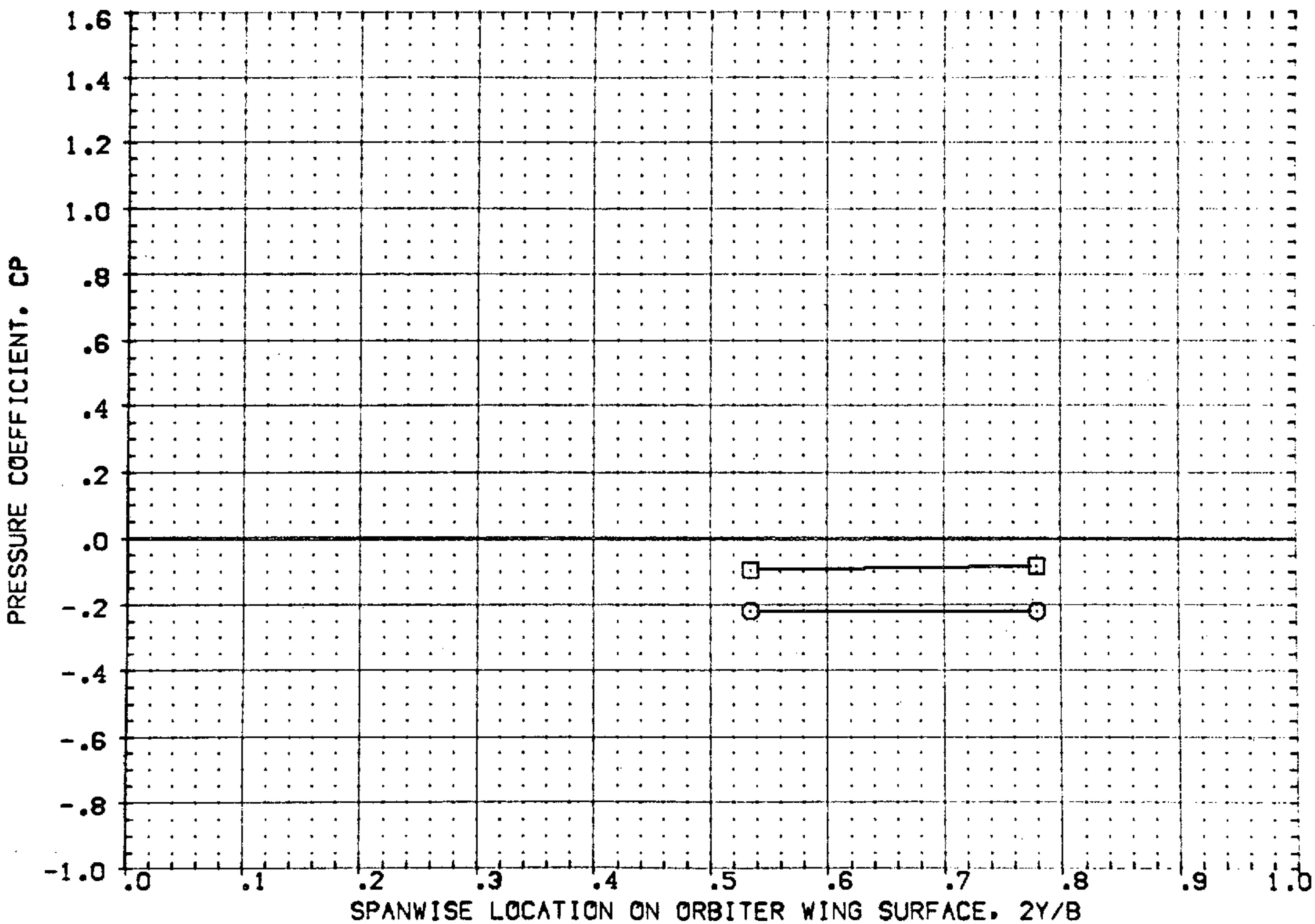


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.400	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
[RF3U01]	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

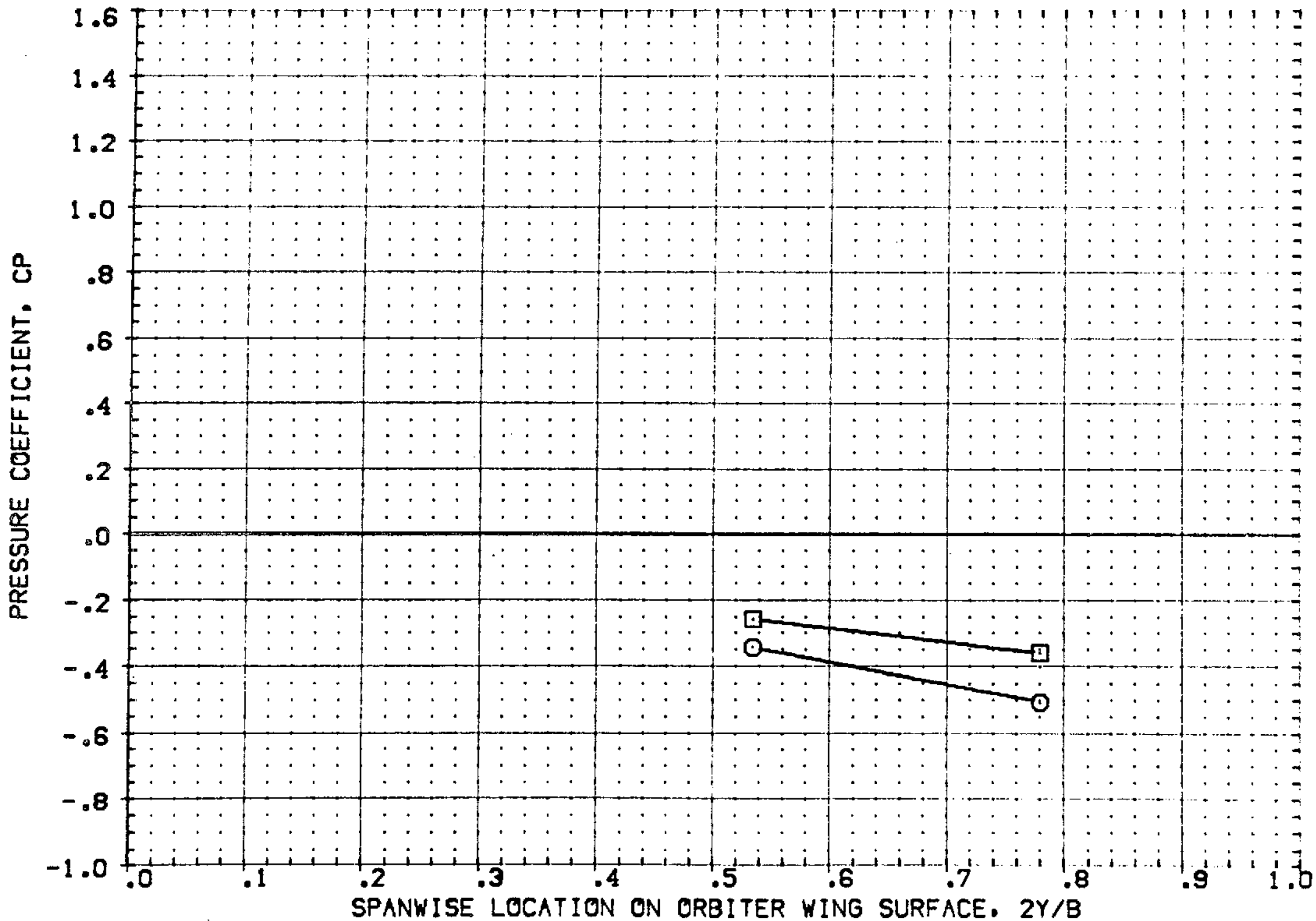


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.725	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

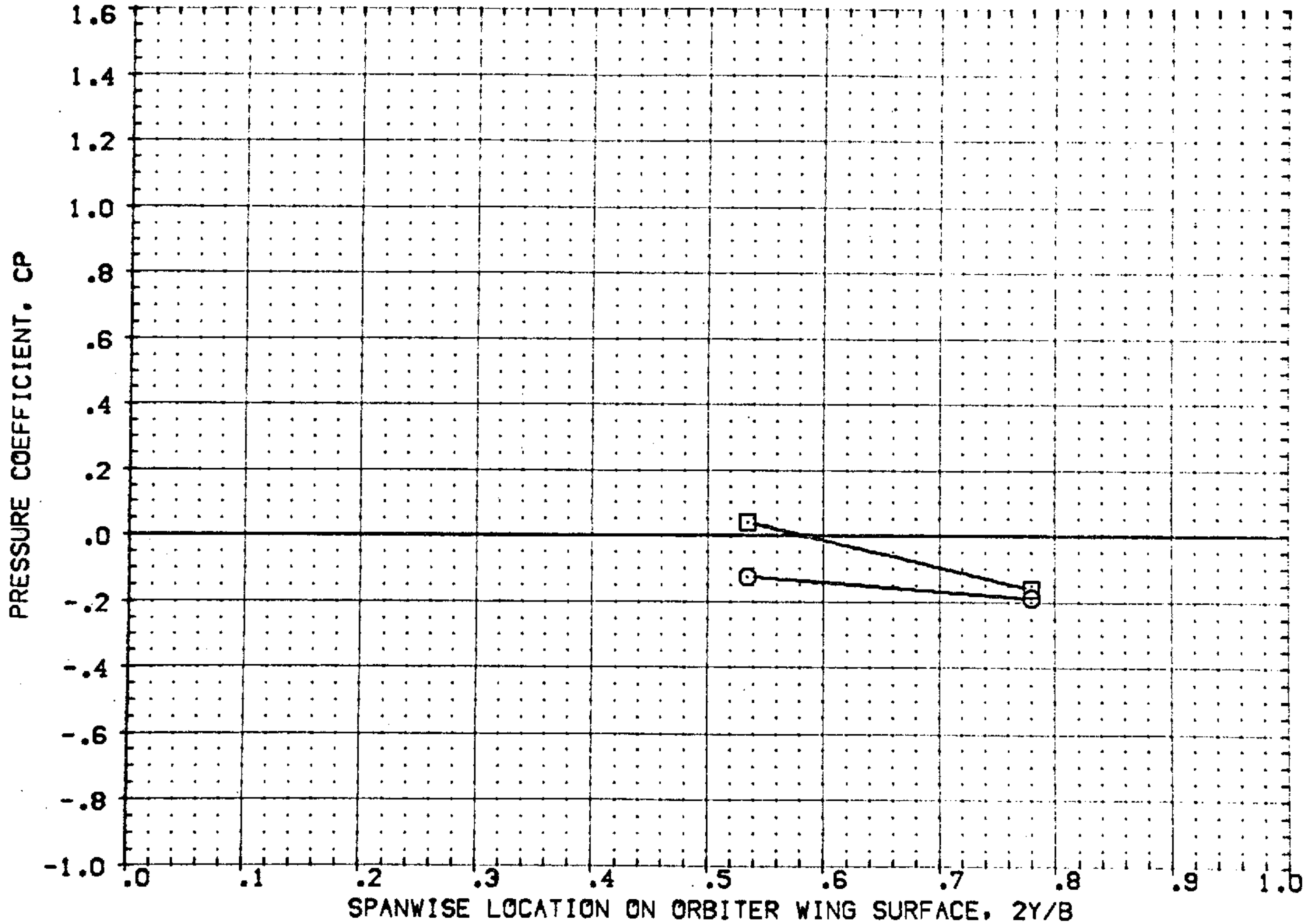


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

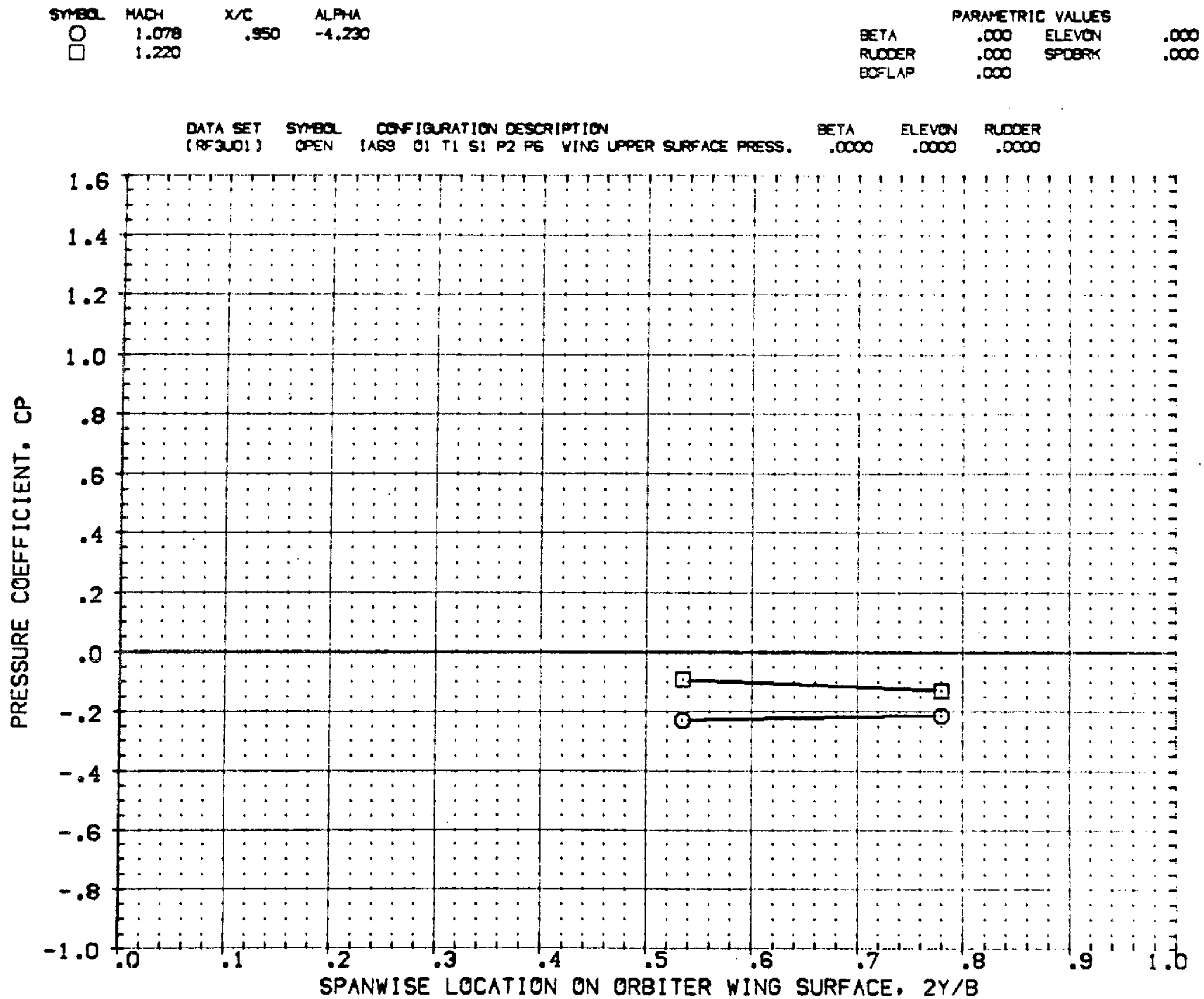


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

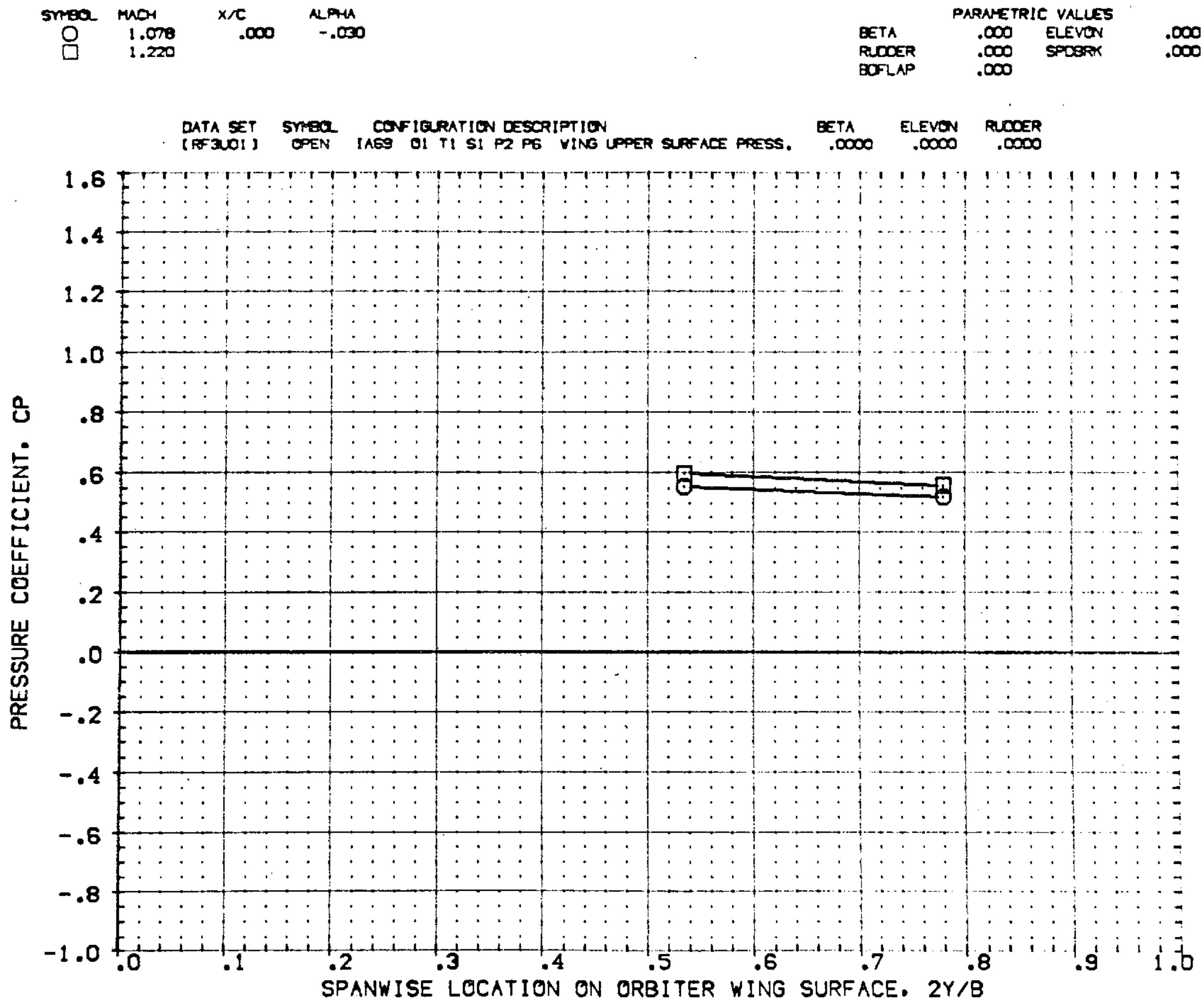


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.050	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 01 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

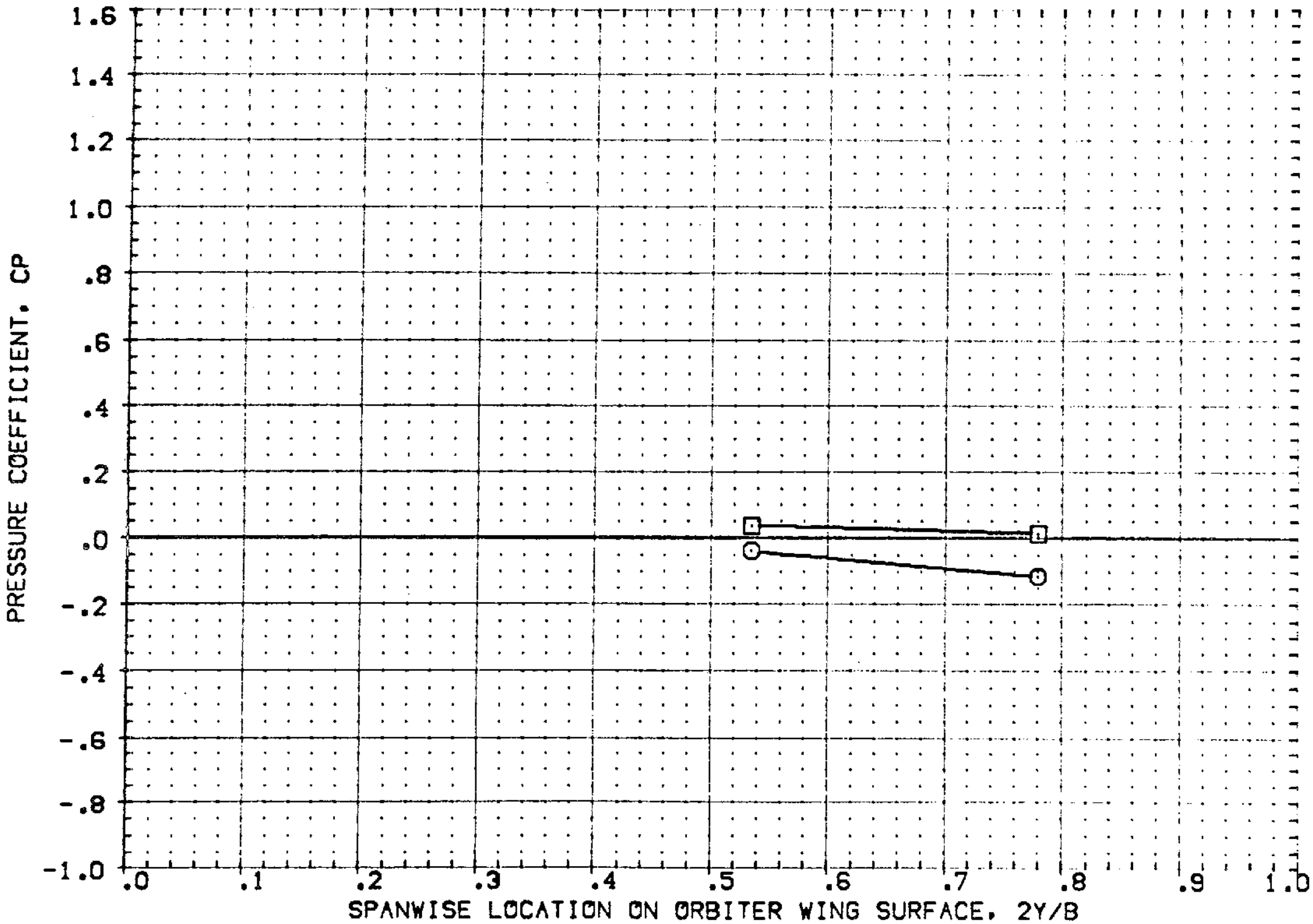


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.150	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

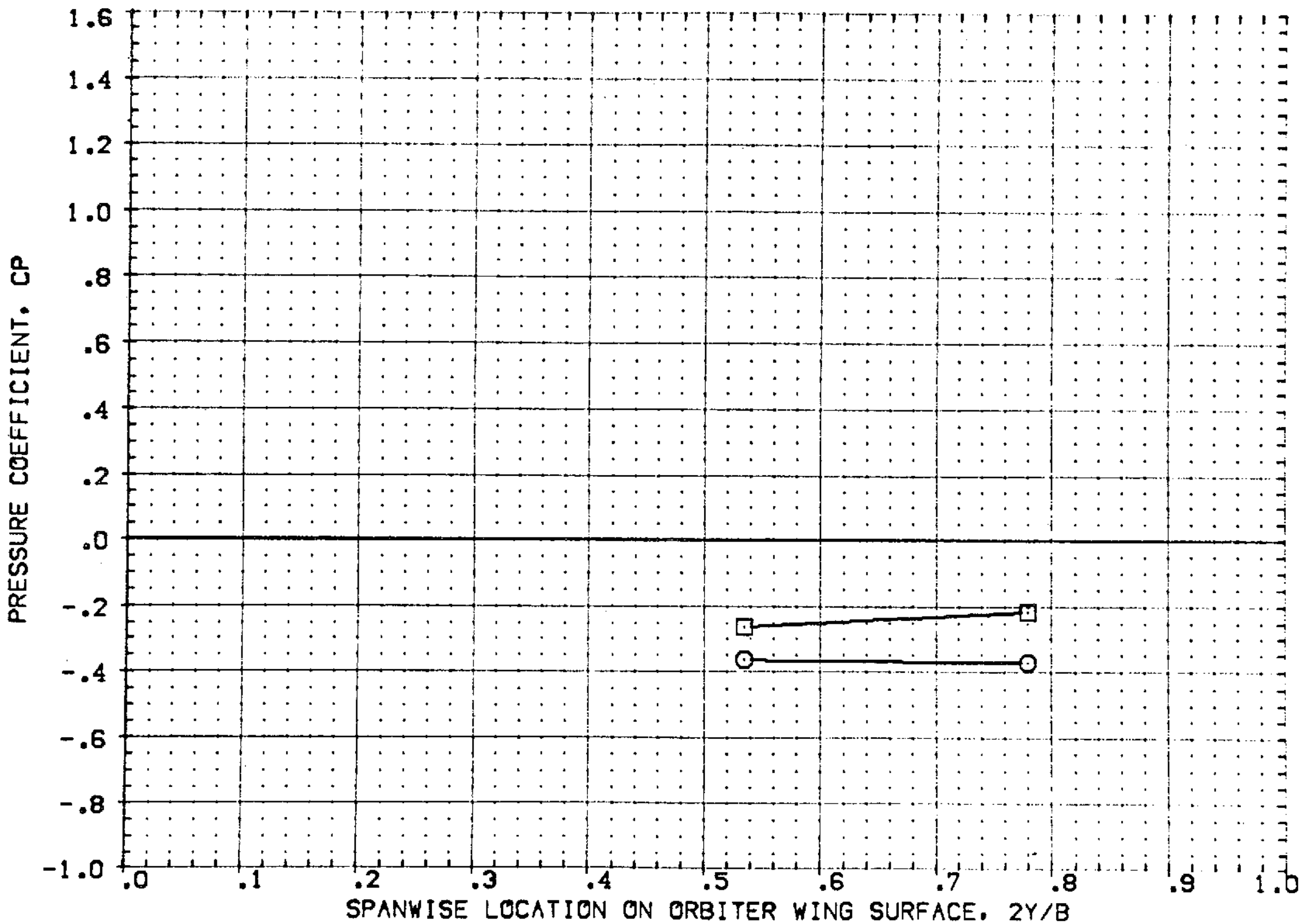


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.400	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

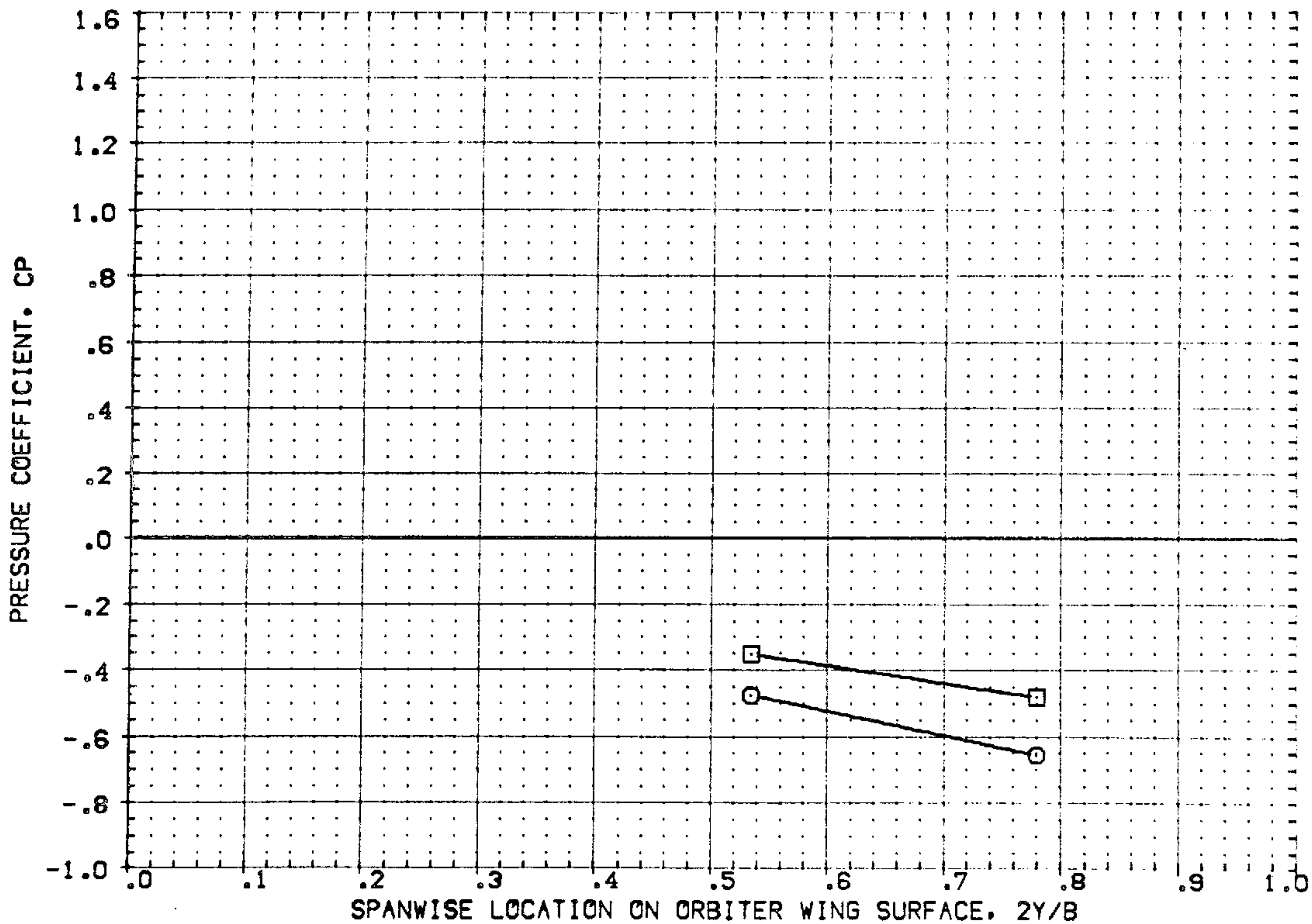


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.725	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P5 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

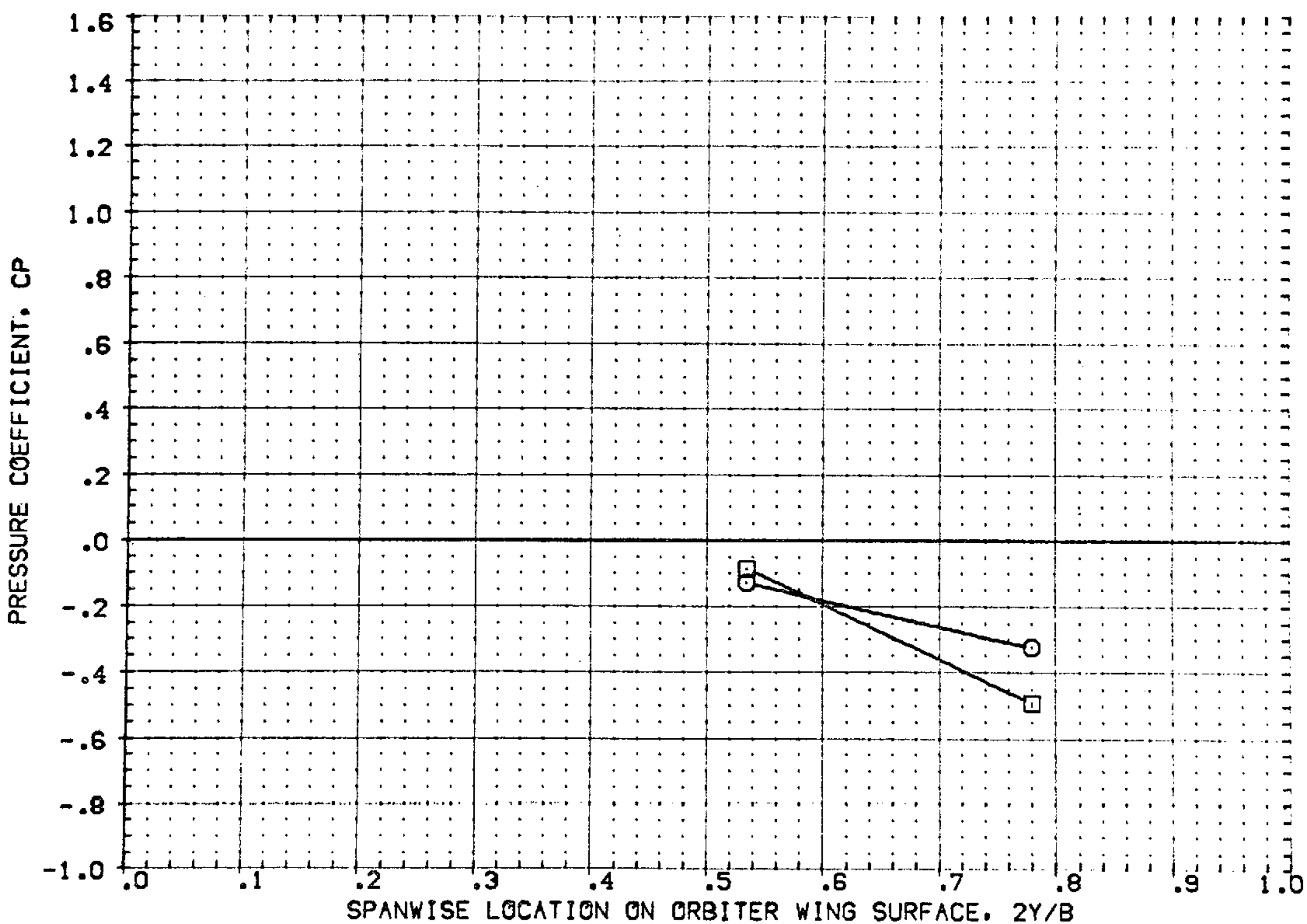


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.950	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

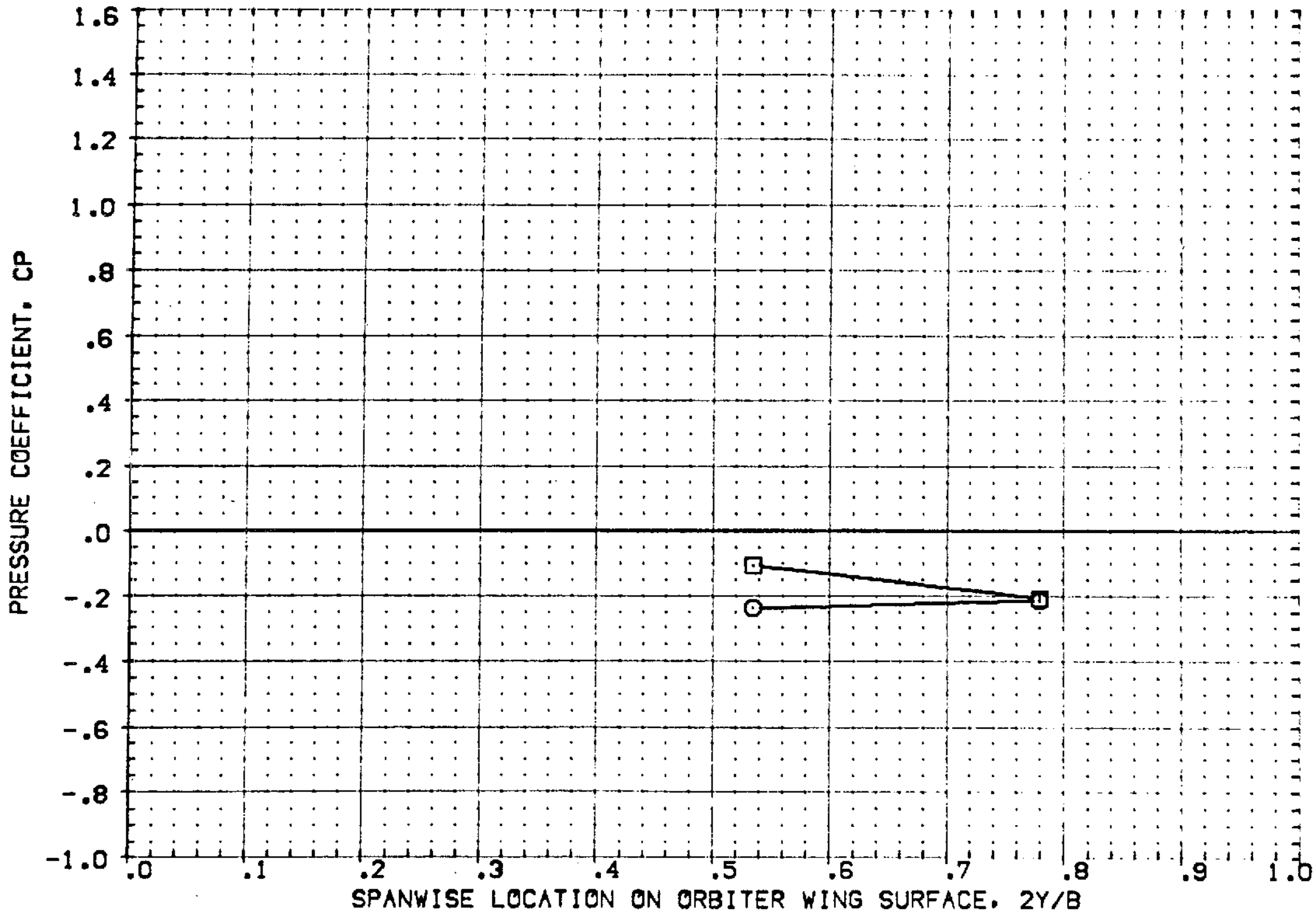


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.000	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

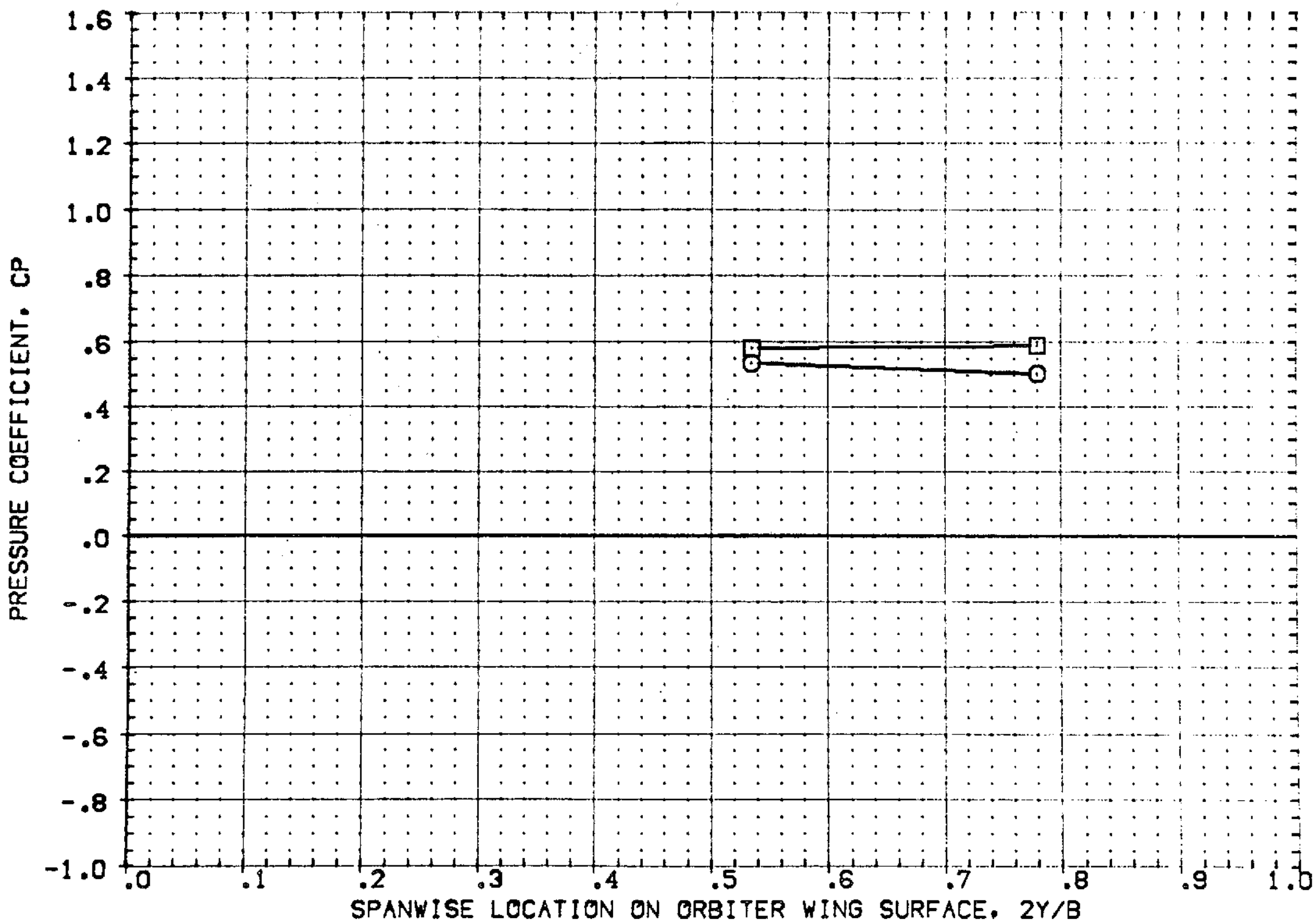


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.050	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

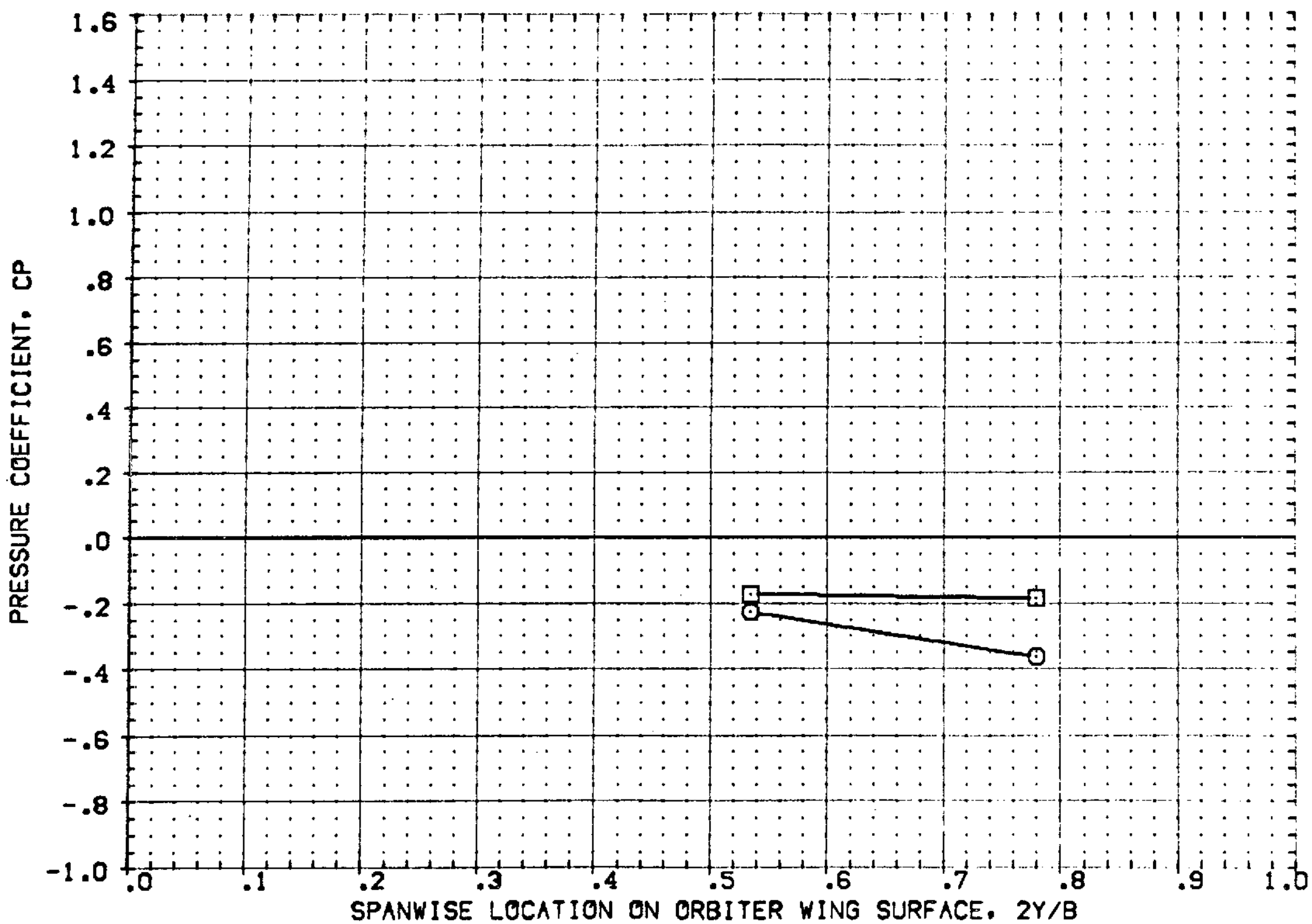


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

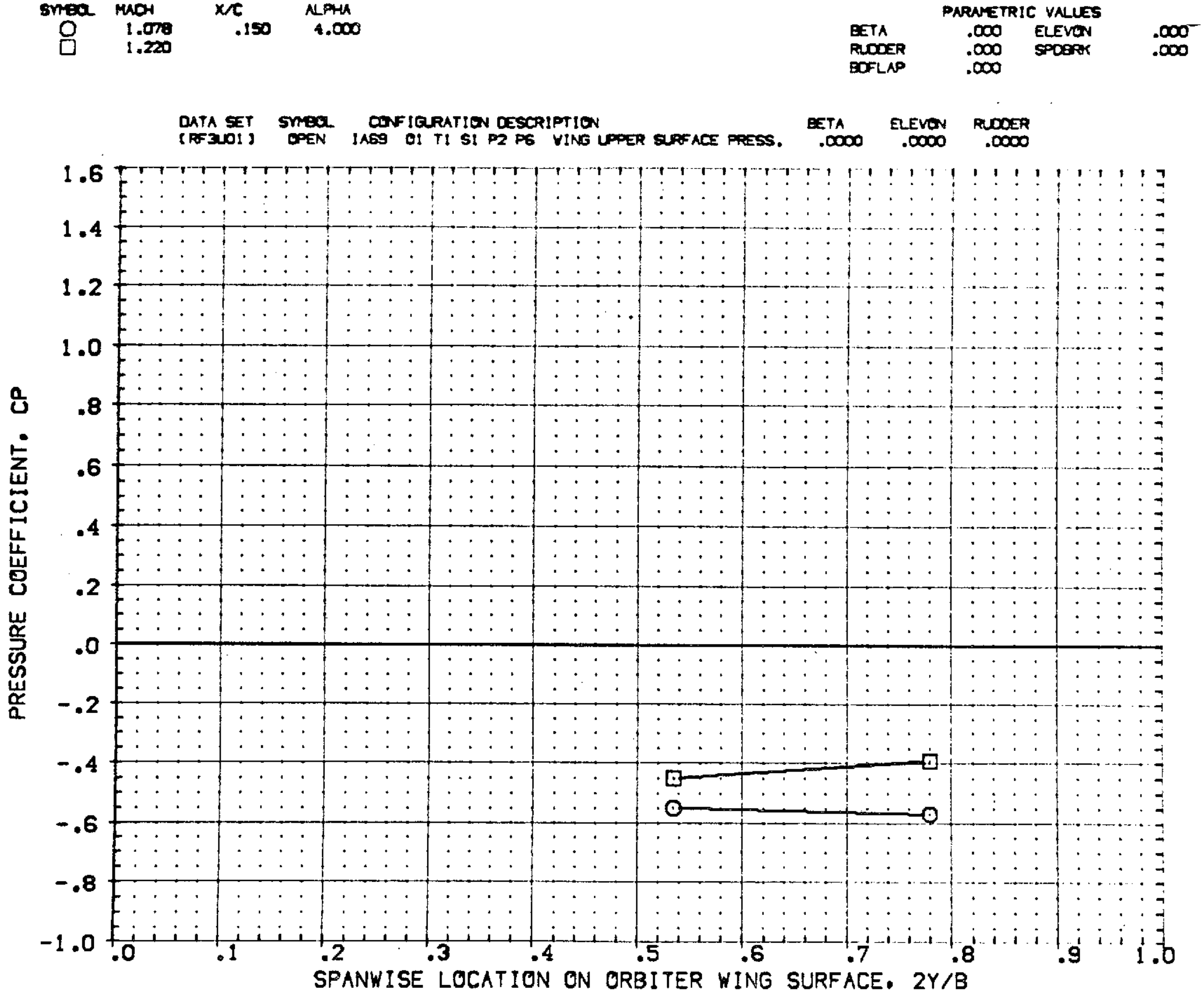


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.400	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P6 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

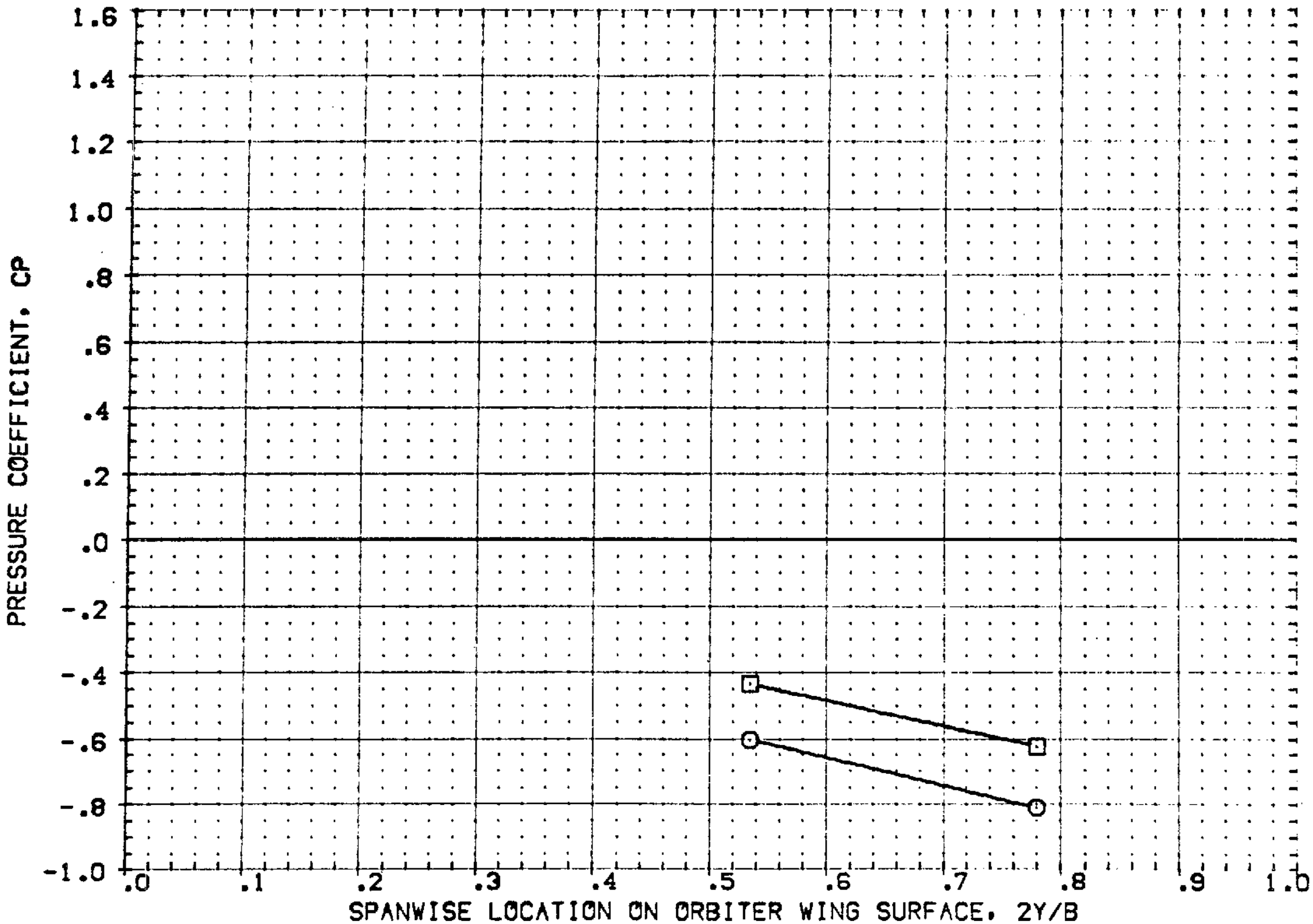


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

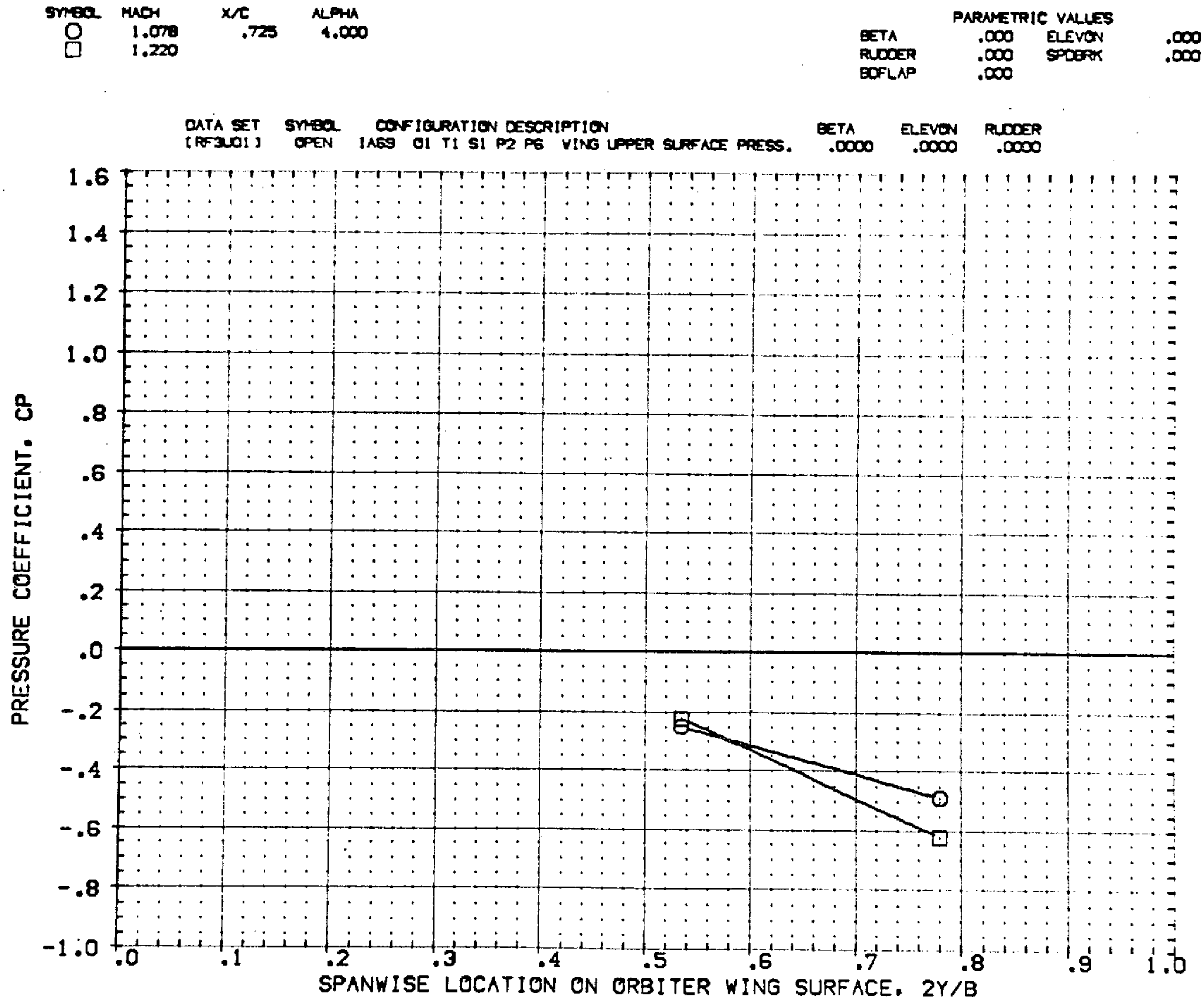


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.950	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3U01)	OPEN	IA69 O1 T1 S1 P2 P5 WING UPPER SURFACE PRESS.	.0000	.0000	.0000

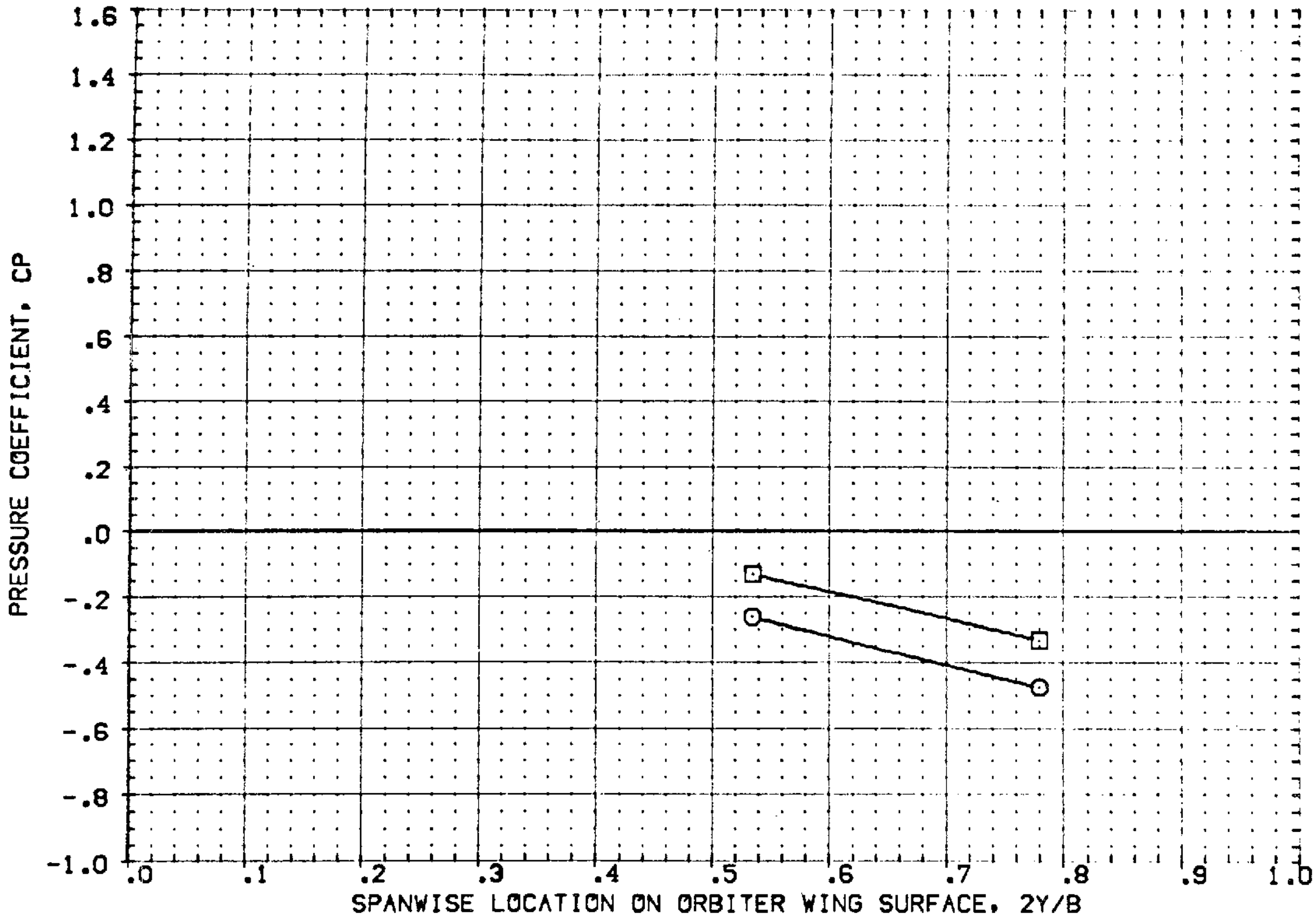


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	2Y/B	ALPHA
○	1.078	.534	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

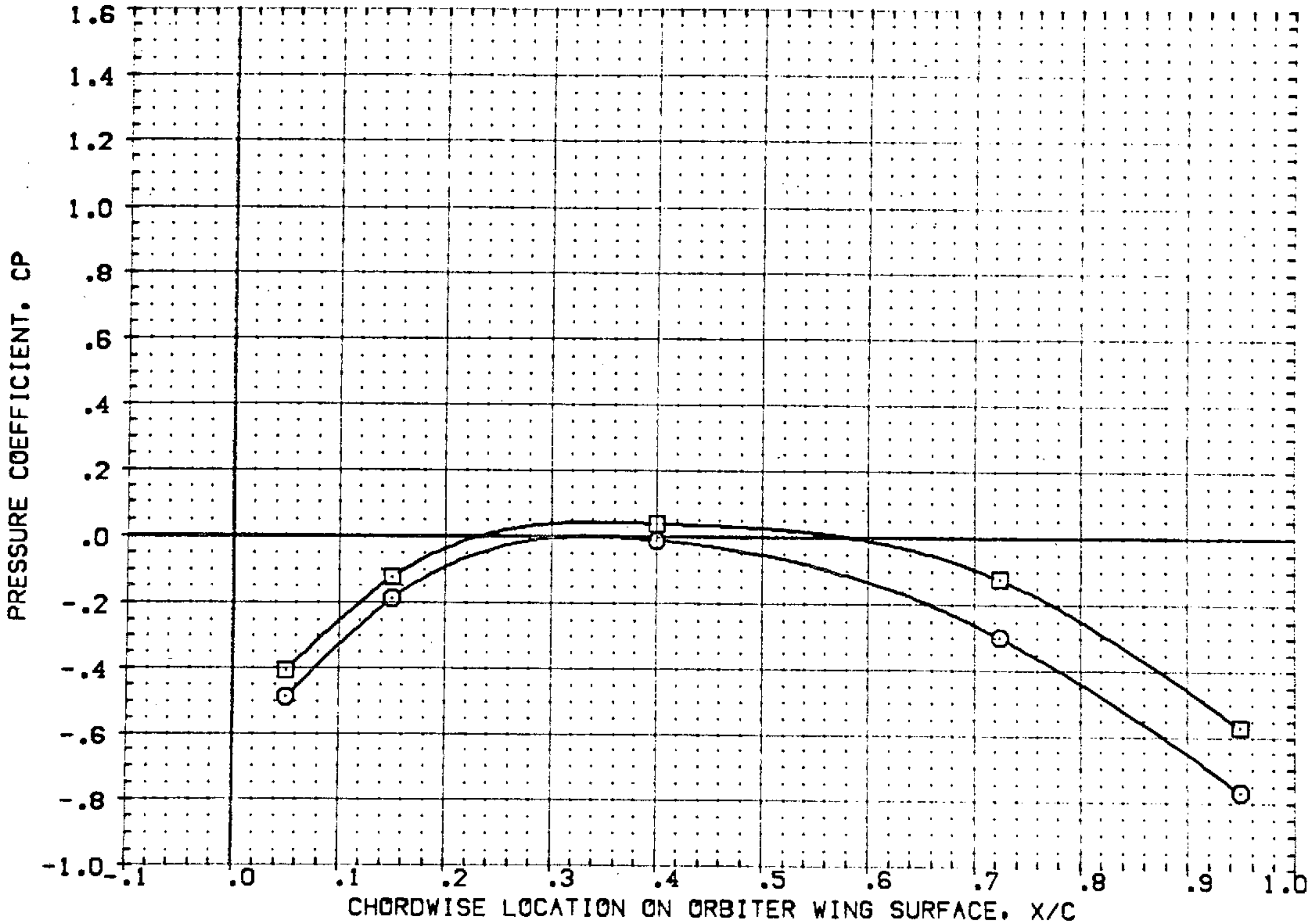


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	2Y/B	ALPHA
○	1.078	.780	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

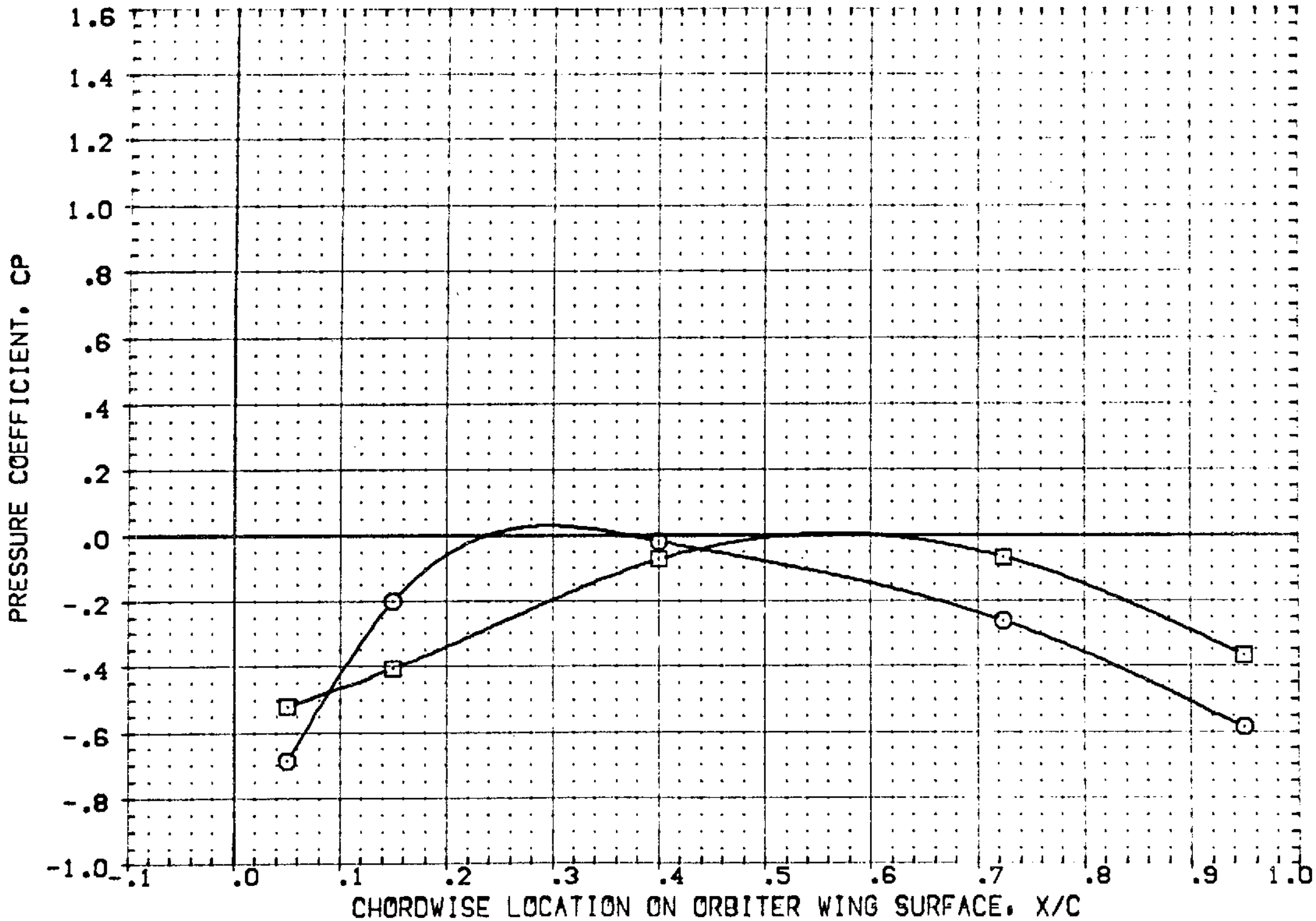


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	2Y/B	ALPHA
○	1.078	.534	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

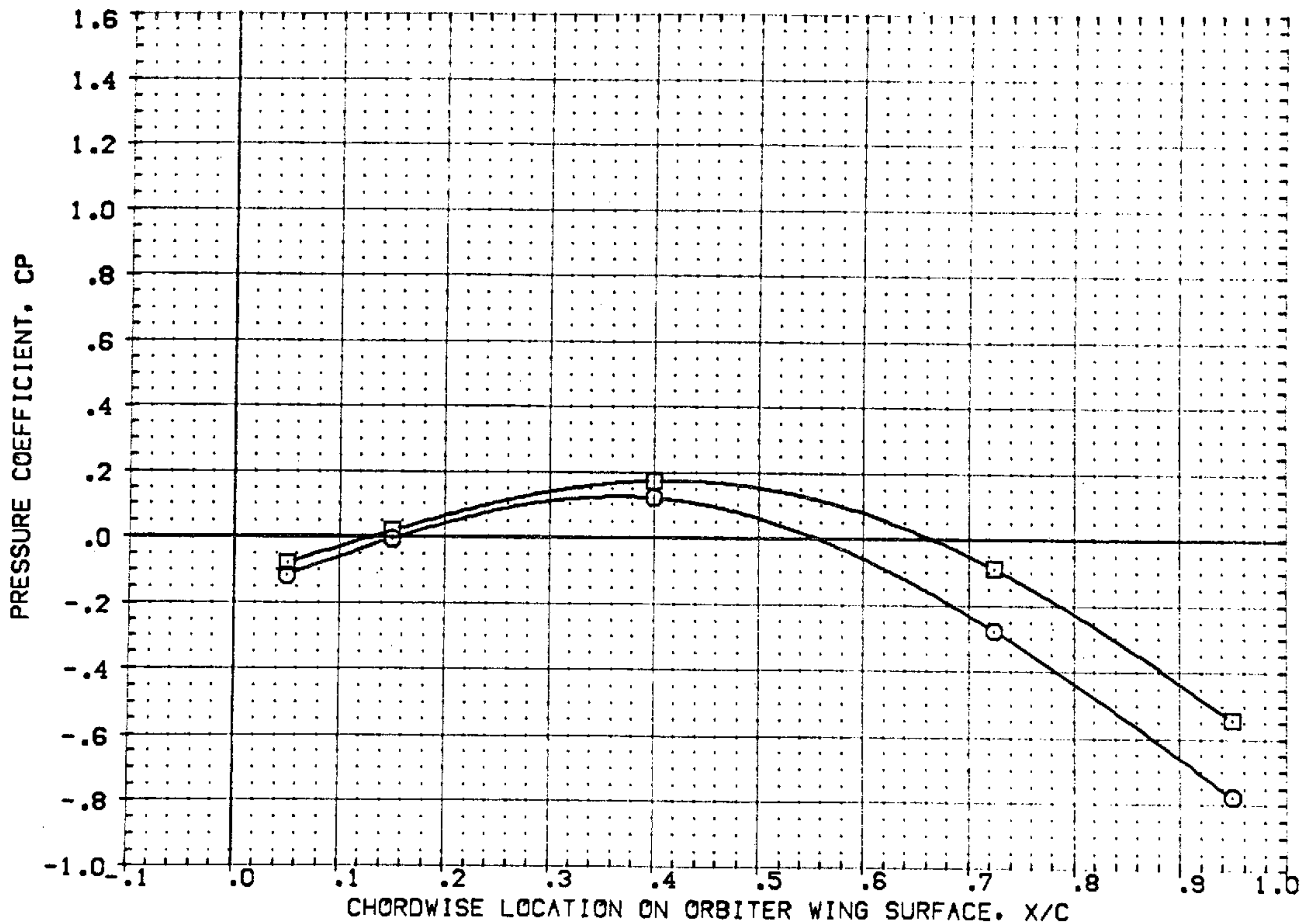


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

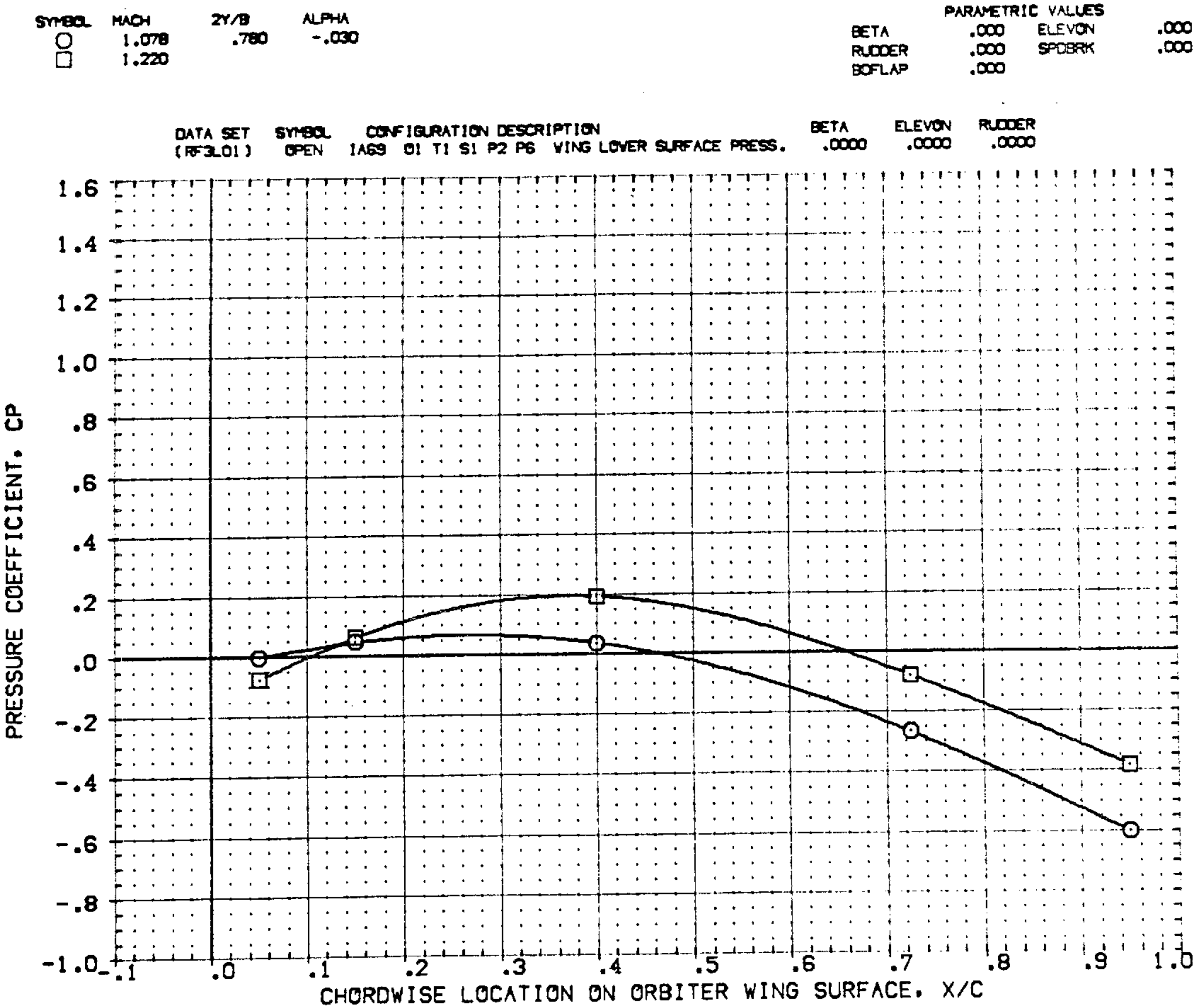


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL MACH 2Y/B ALPHA
○ 1.078 .534 4.000
□ 1.220

PARAMETRIC VALUES
BETA .000 ELEVON .000
RUDDER .000 SPDBRK .000
BDFLAP .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA ELEVON RUDDER
(RF3L01) OPEN IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS. .0000 .0000 .0000

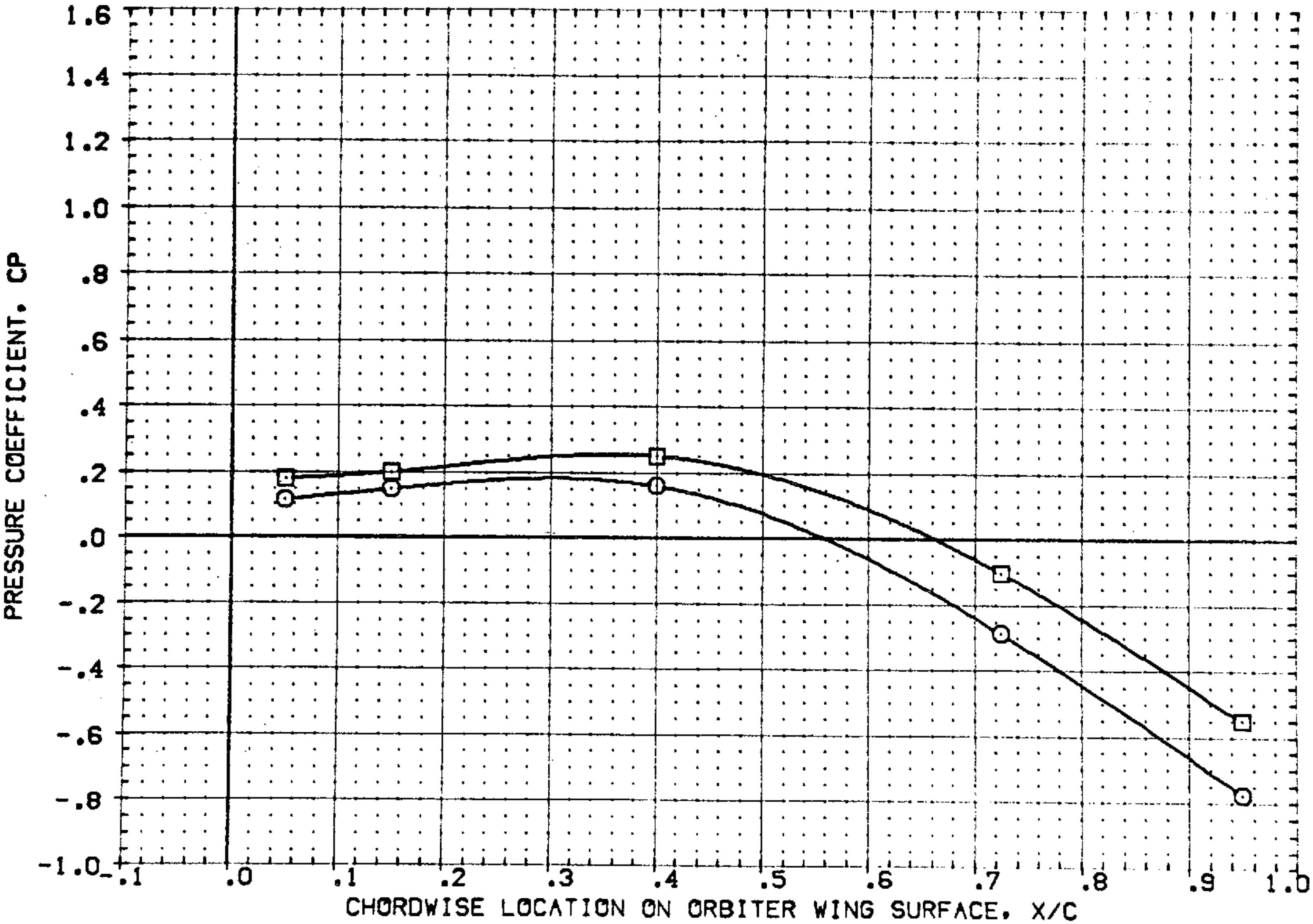


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	2Y/B	ALPHA
○	1.078	.780	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

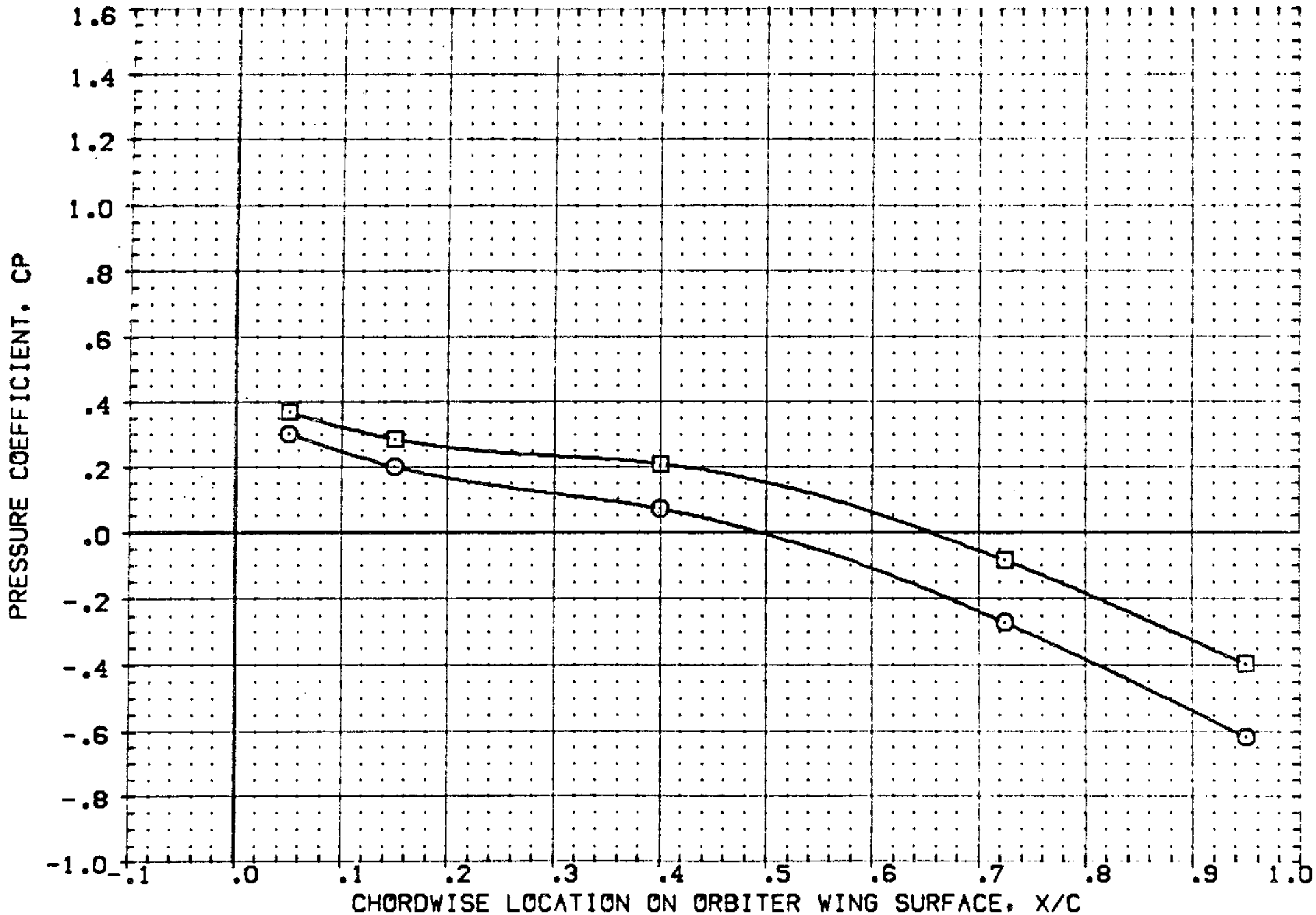


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.050	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
[RF3L01]	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

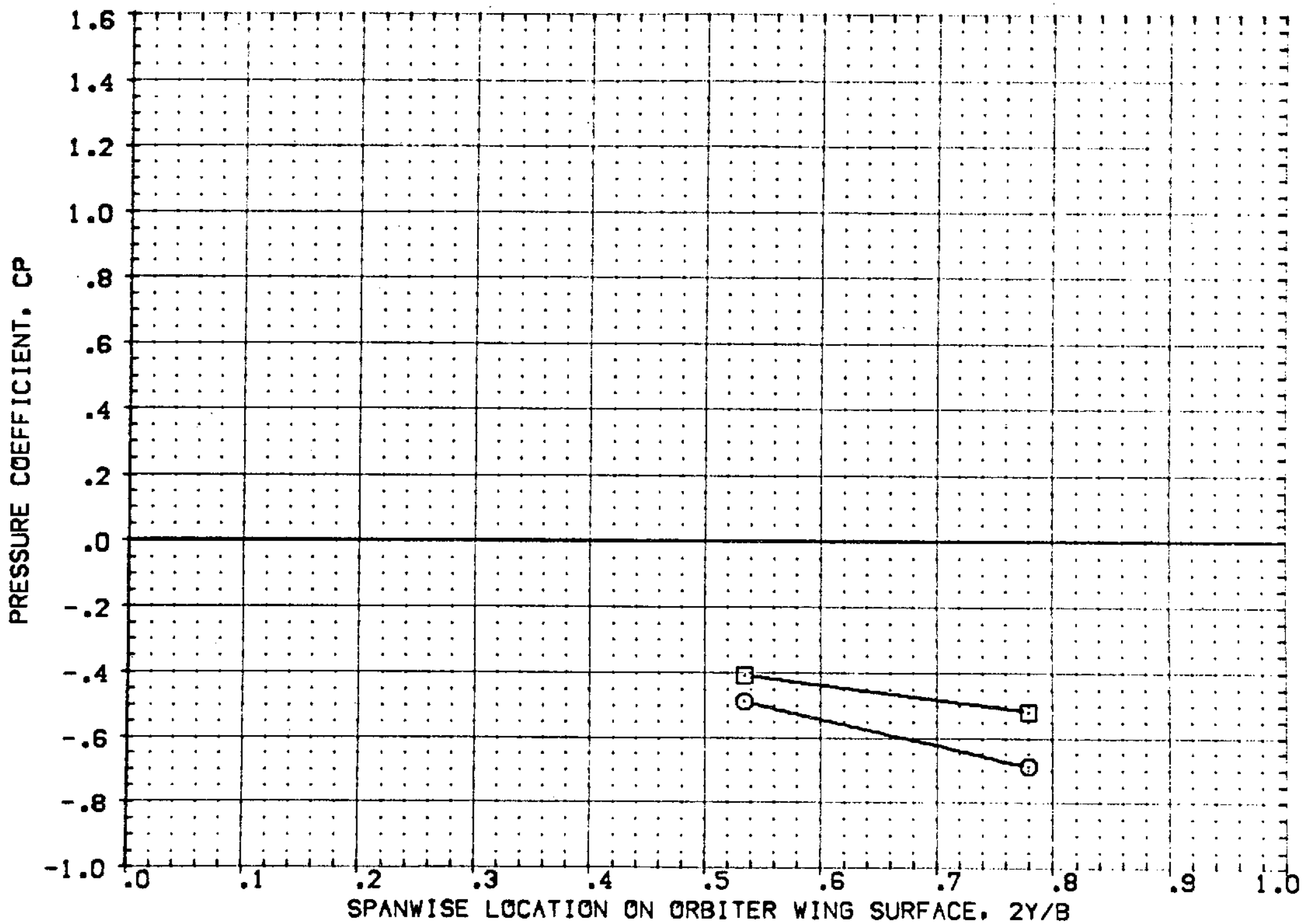


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.150	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

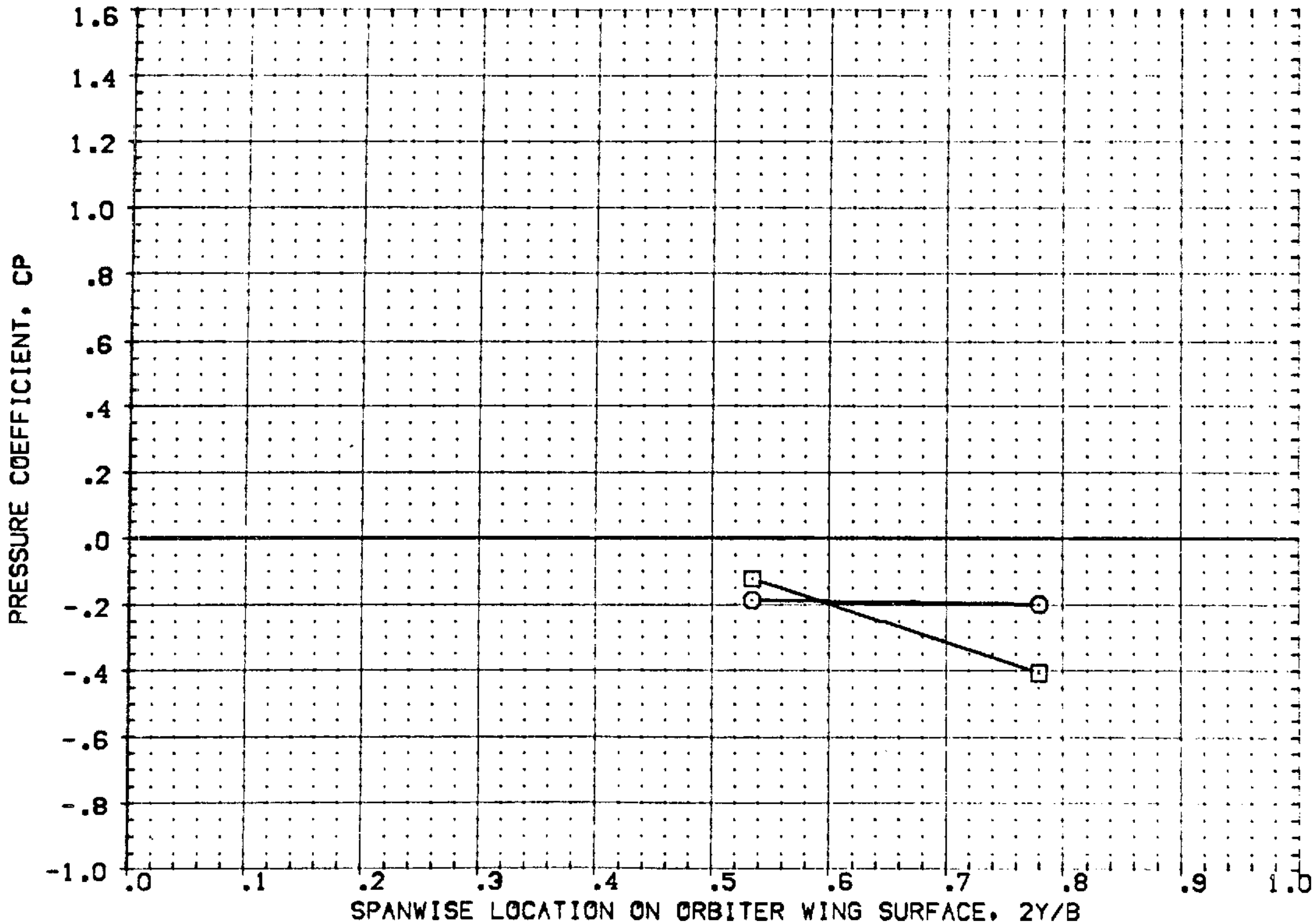


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.400	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

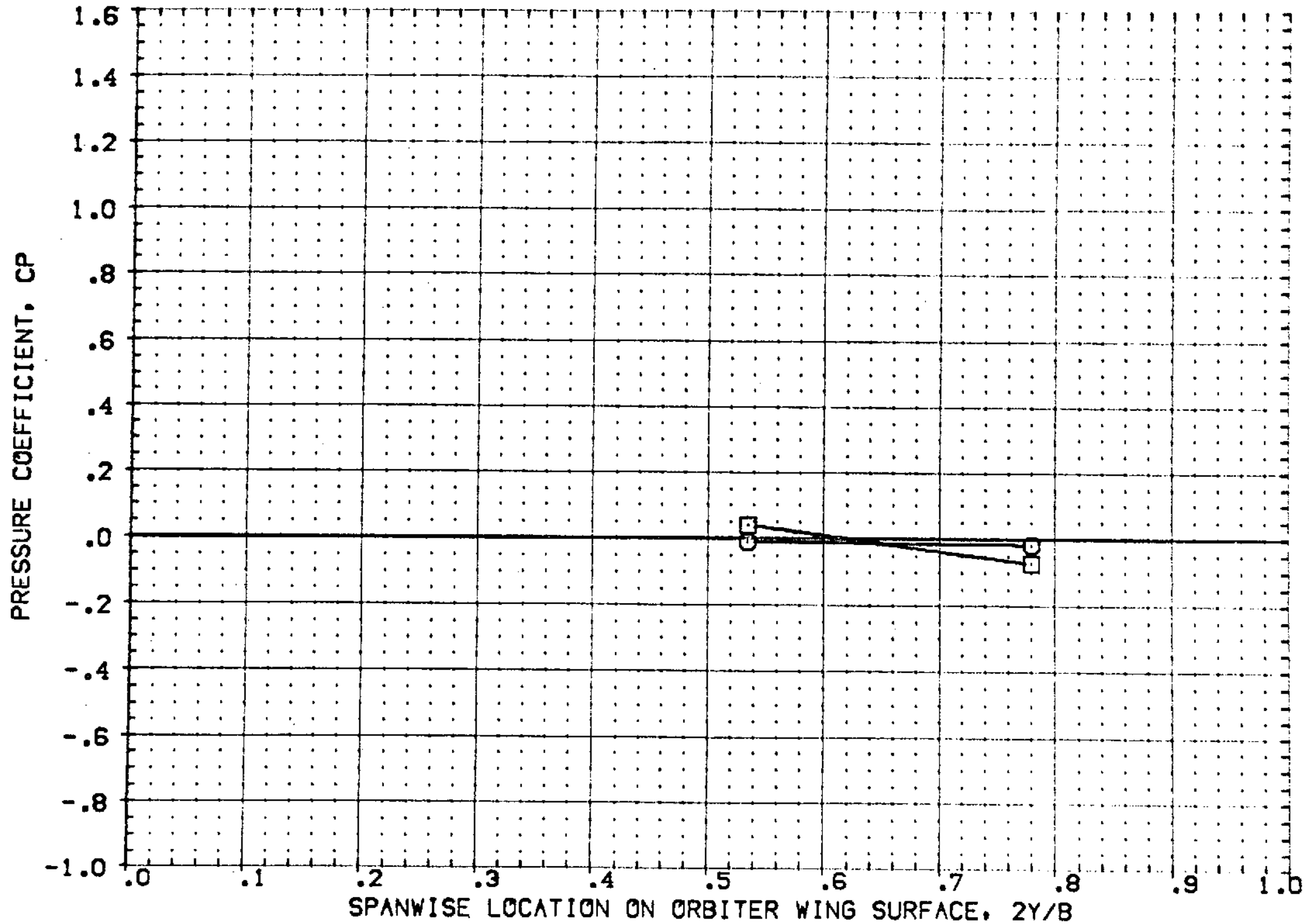


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.725	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

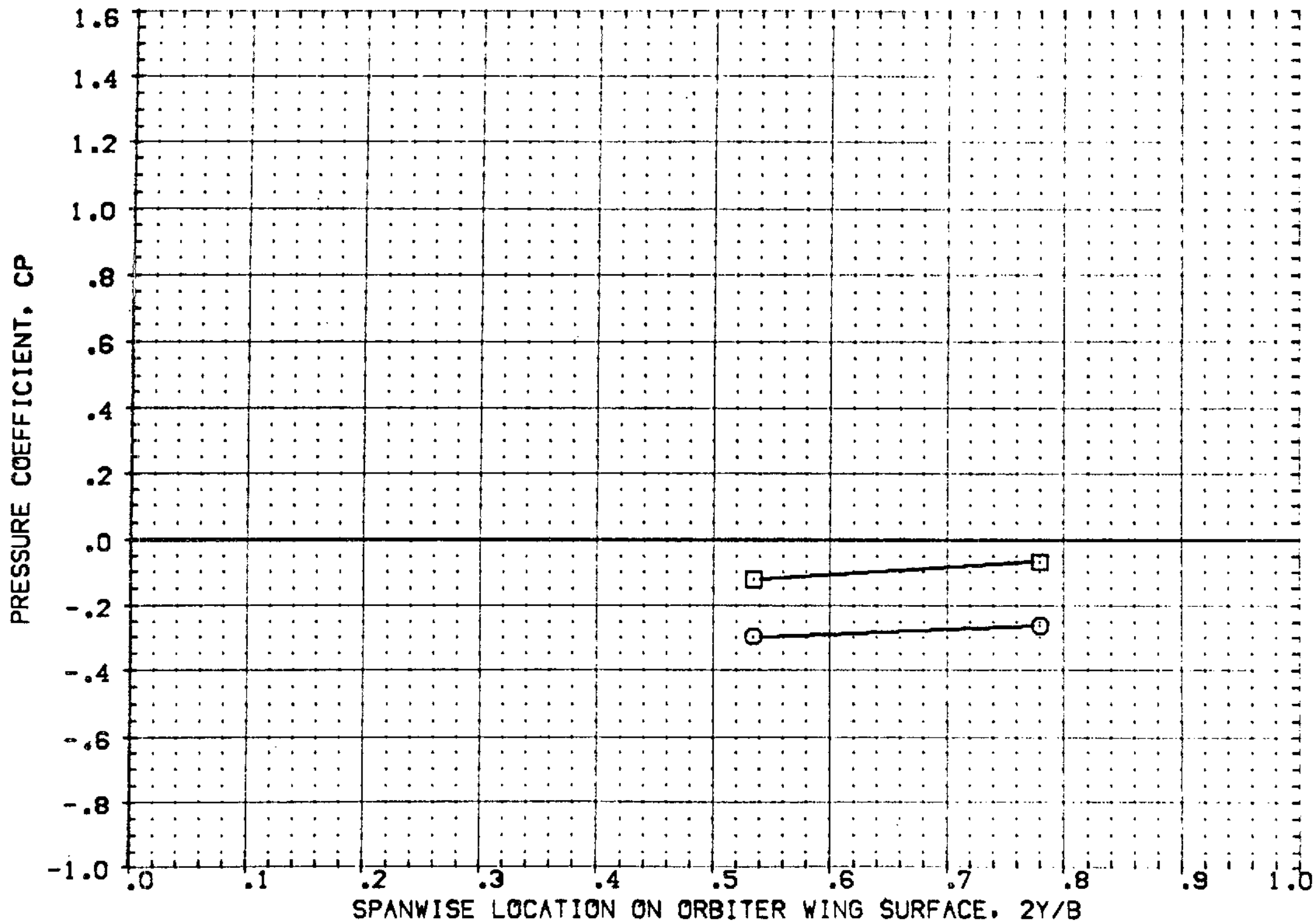


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

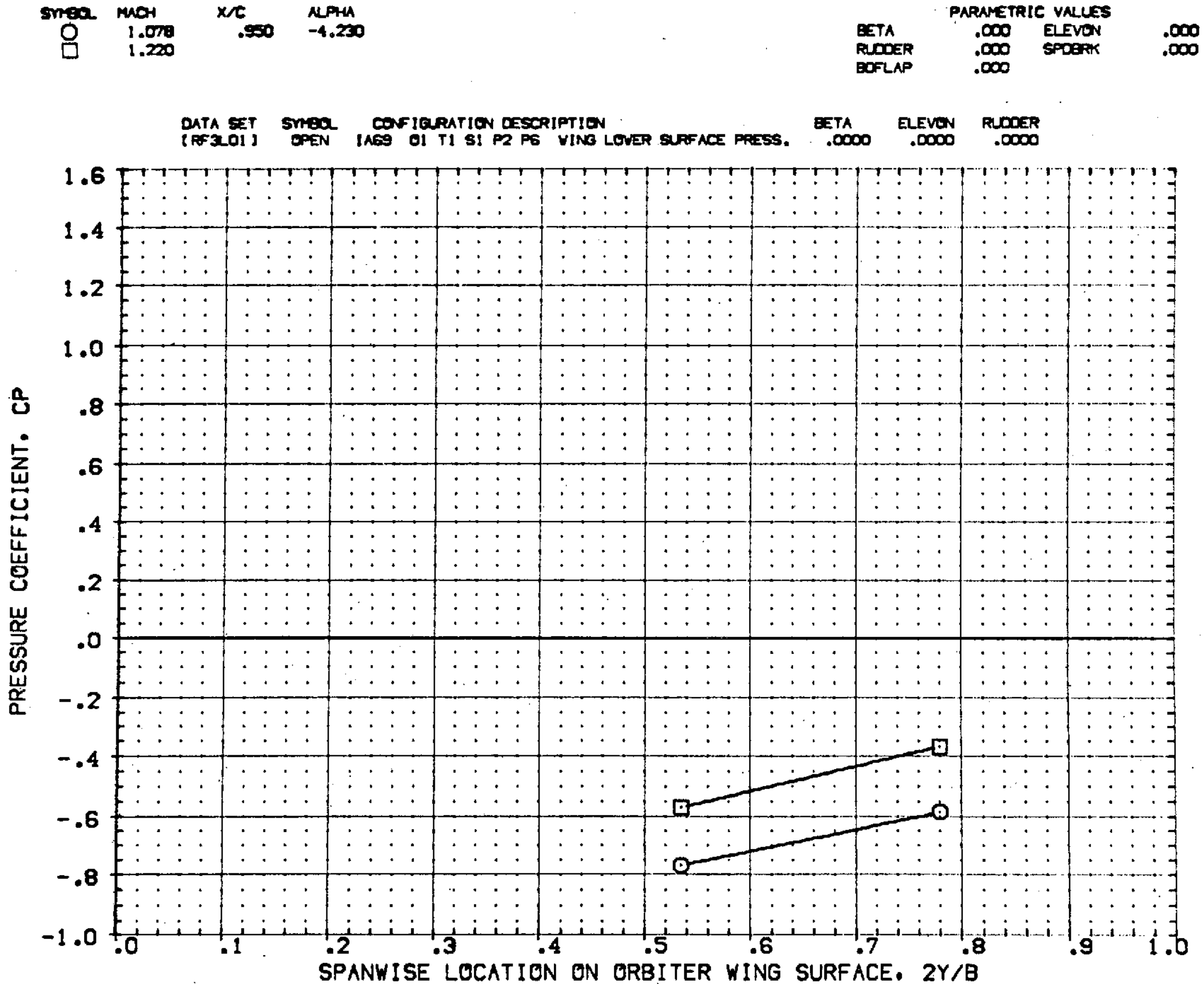


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.050	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

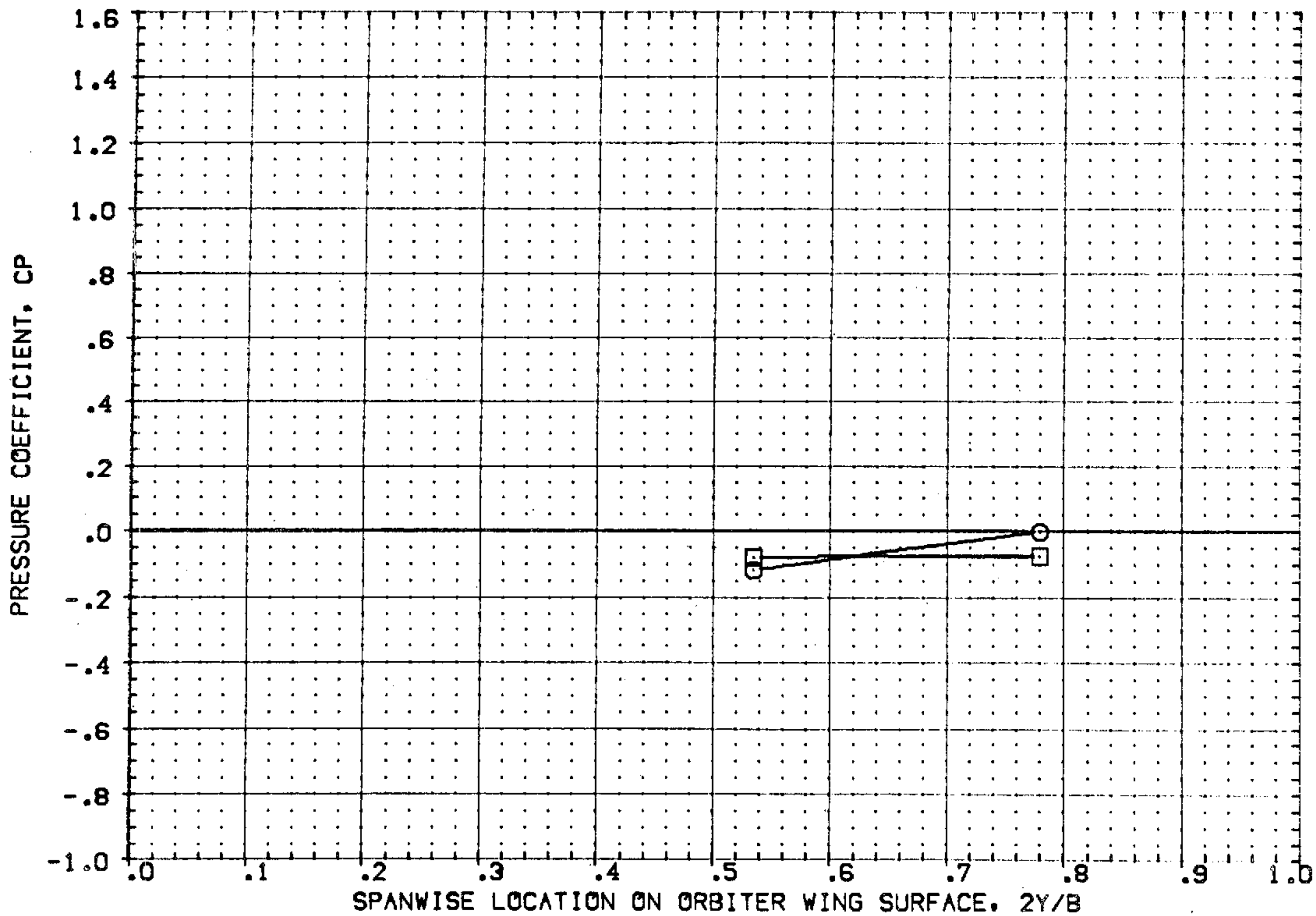


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.150	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

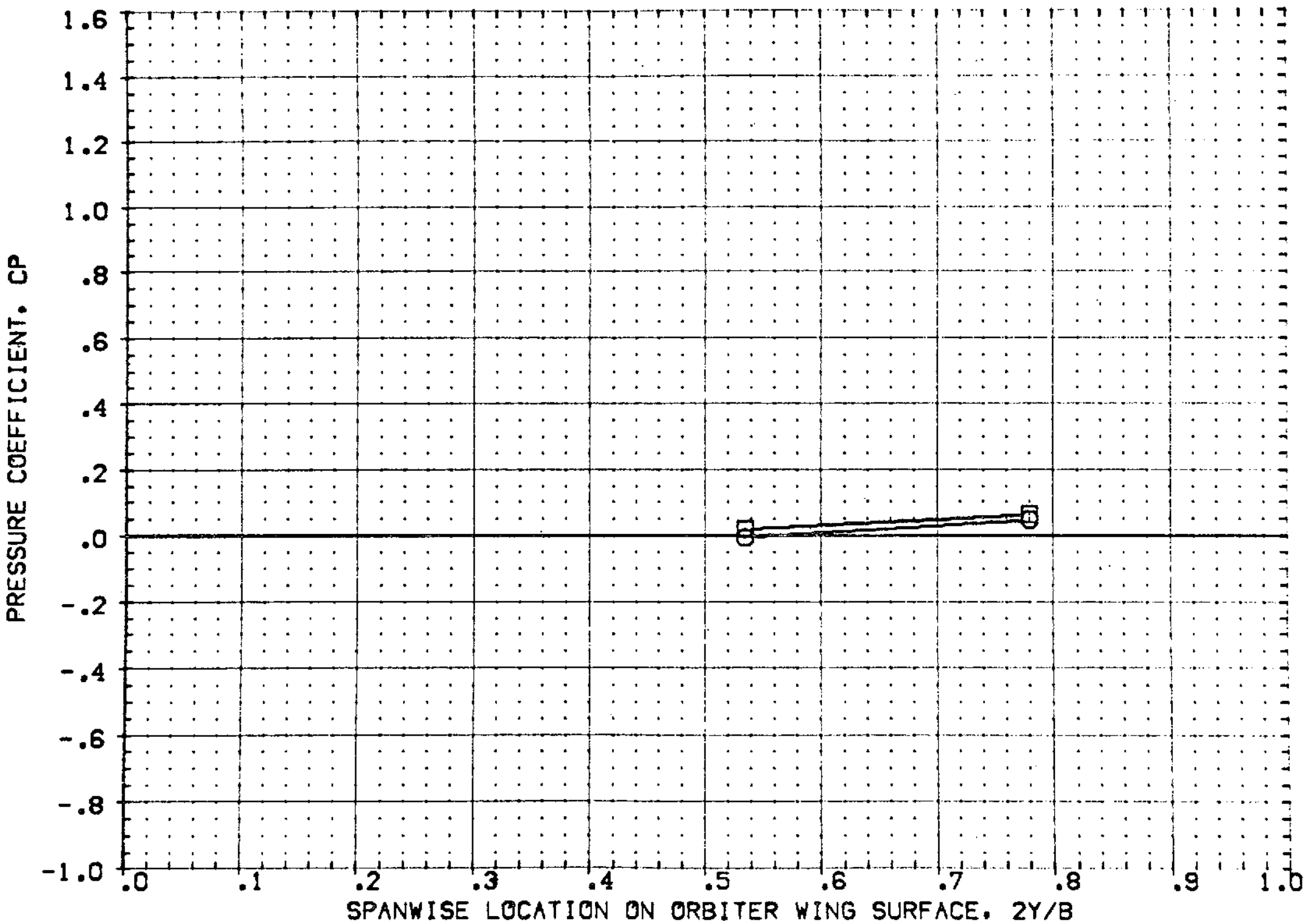


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.400	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

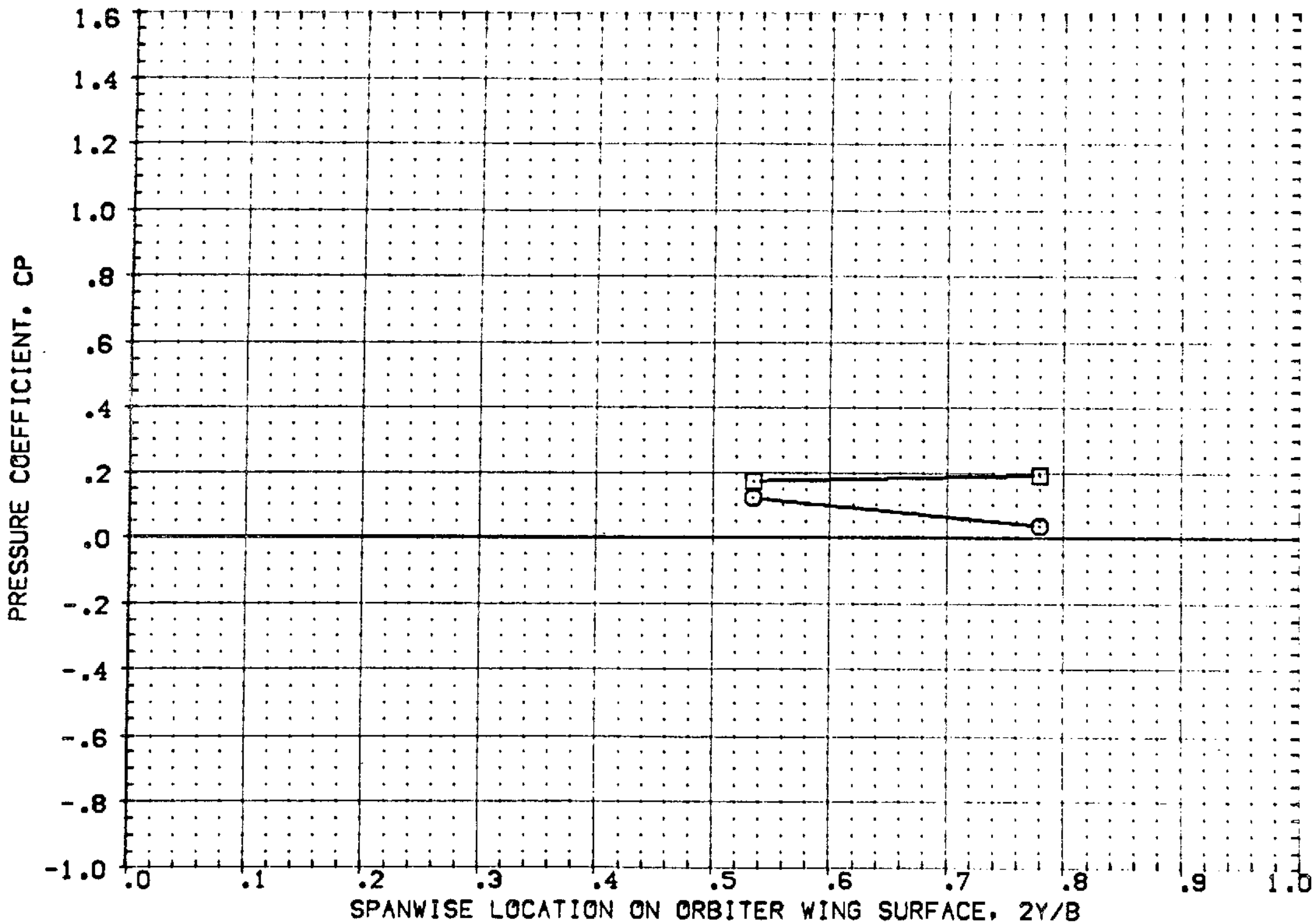


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.725	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

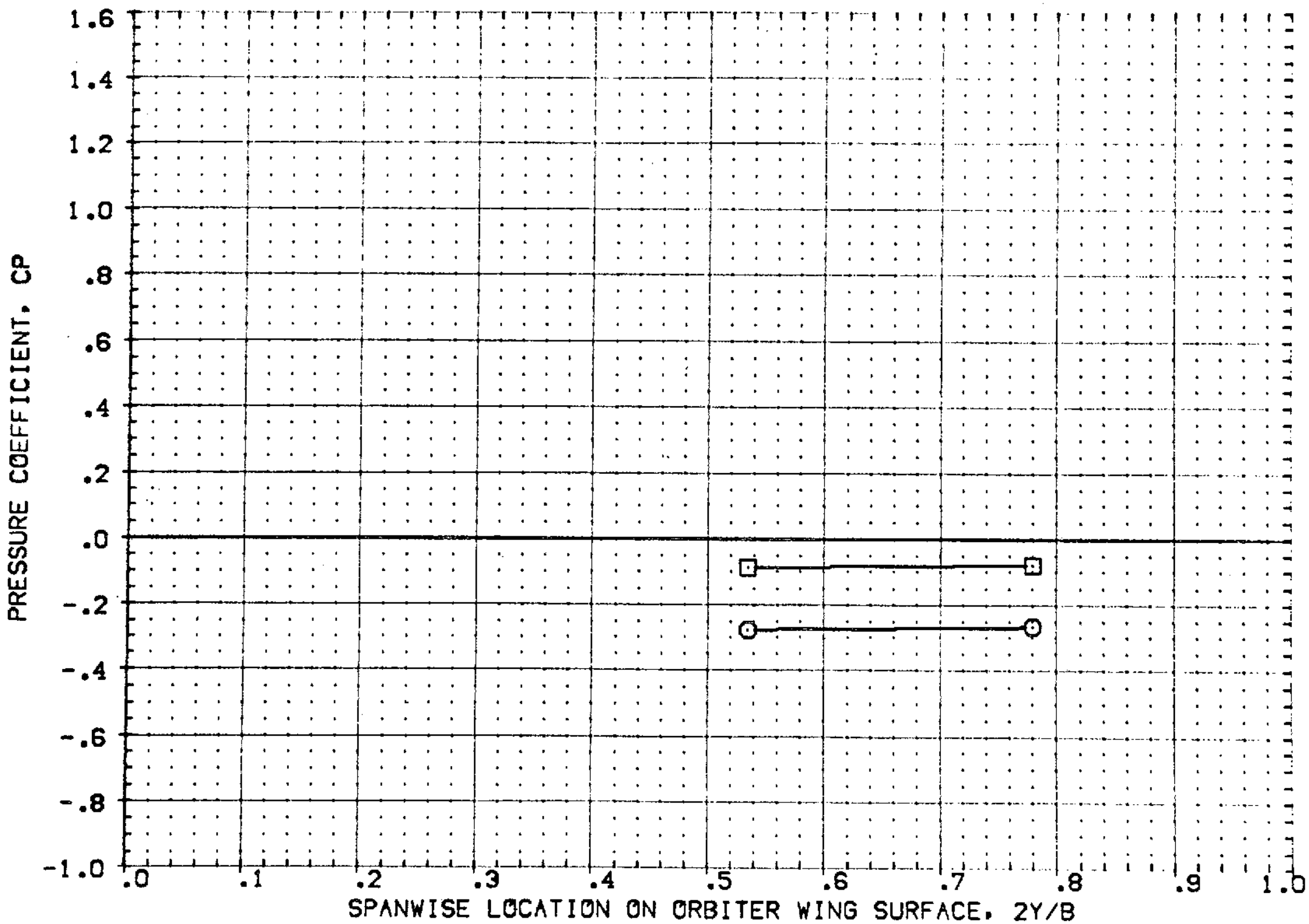


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.950	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

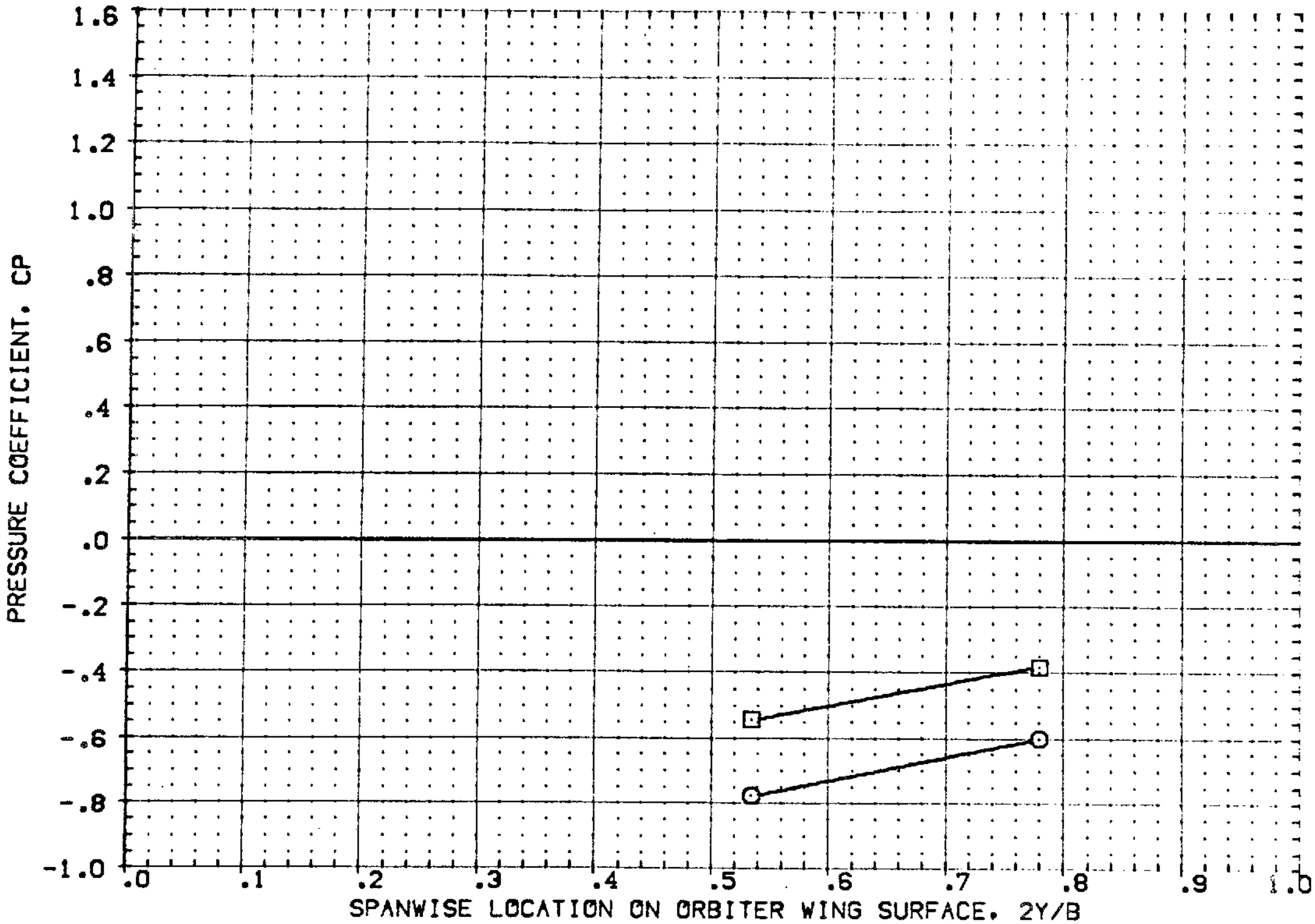


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

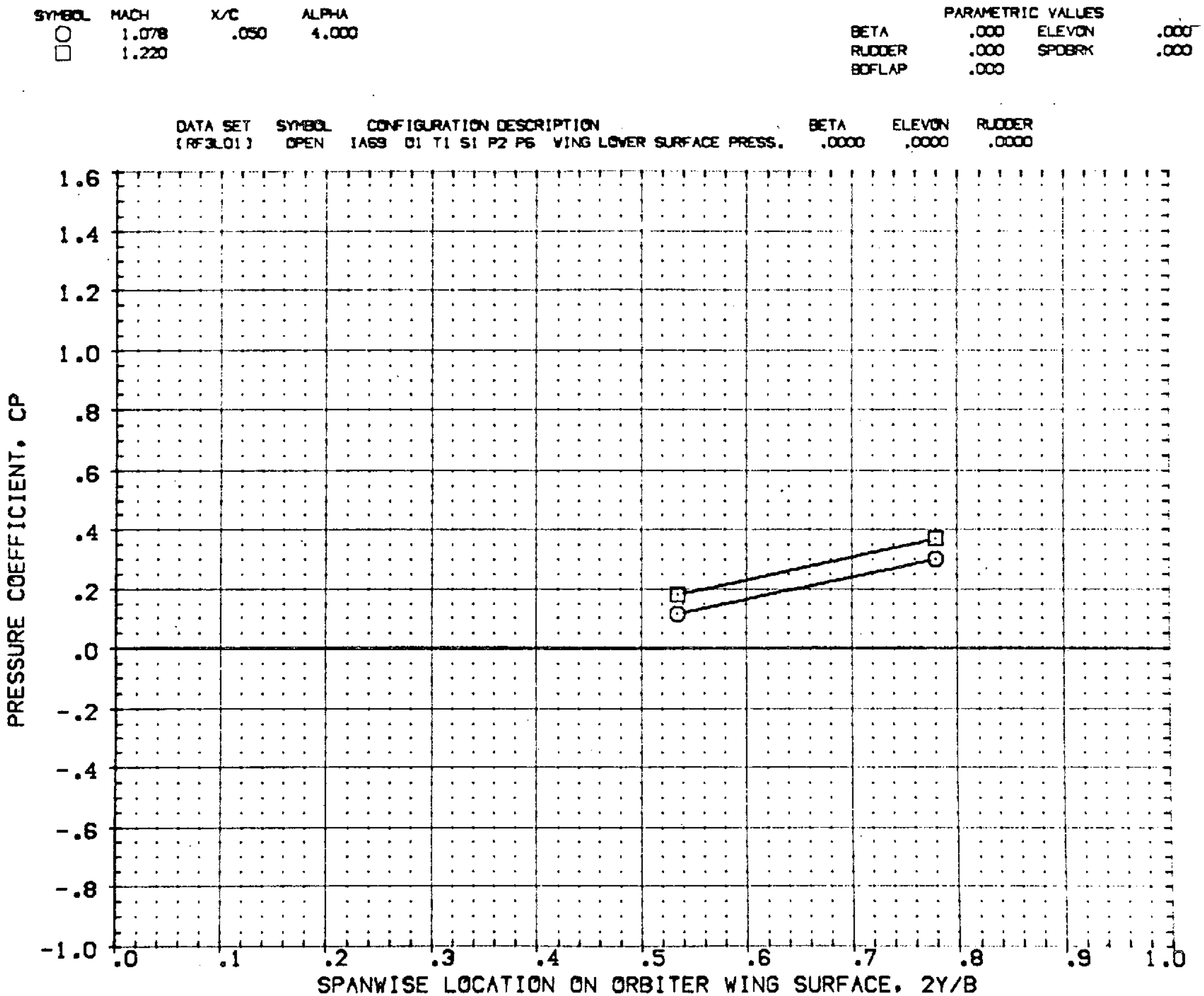


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.150	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

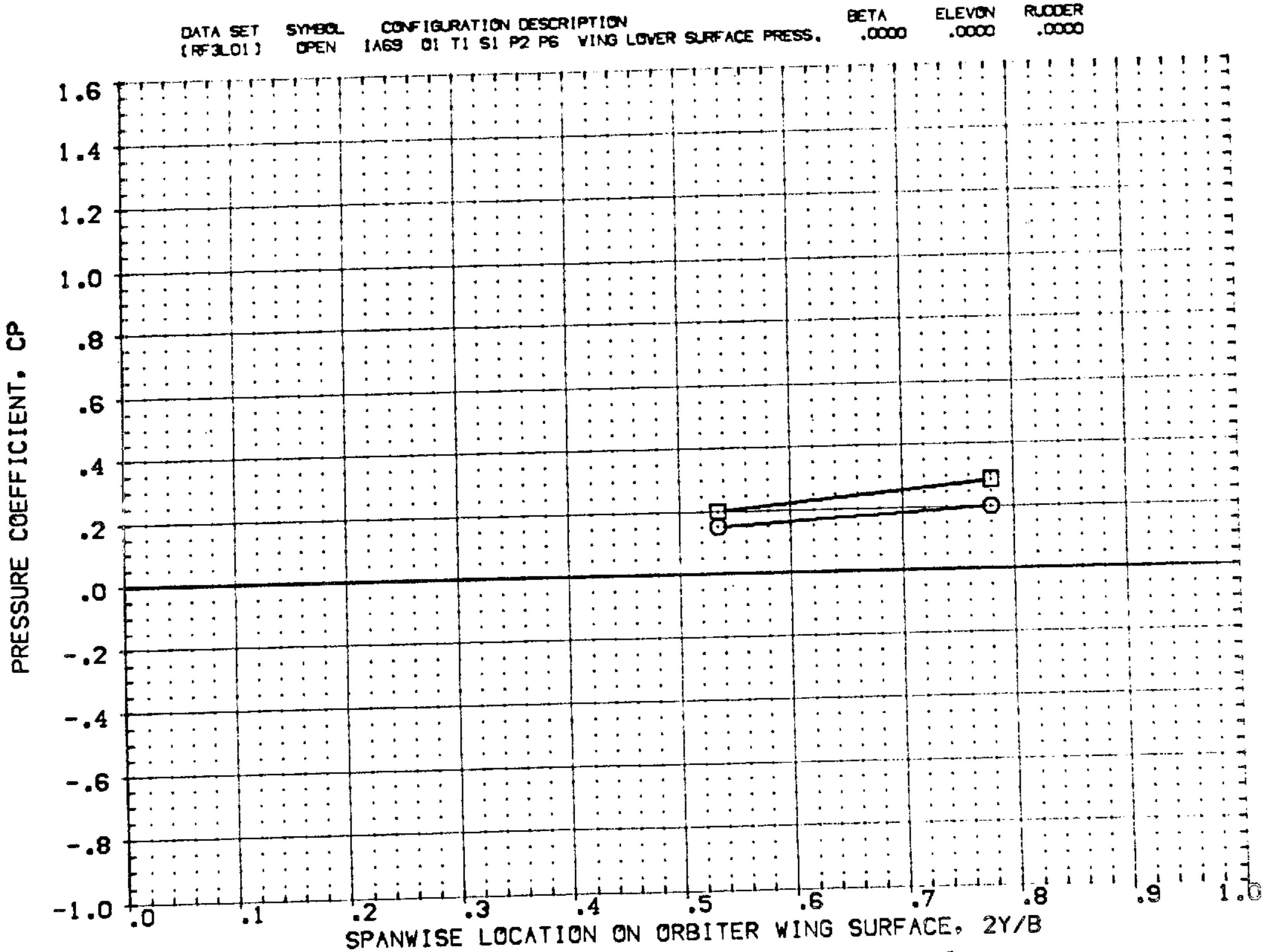


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.400	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

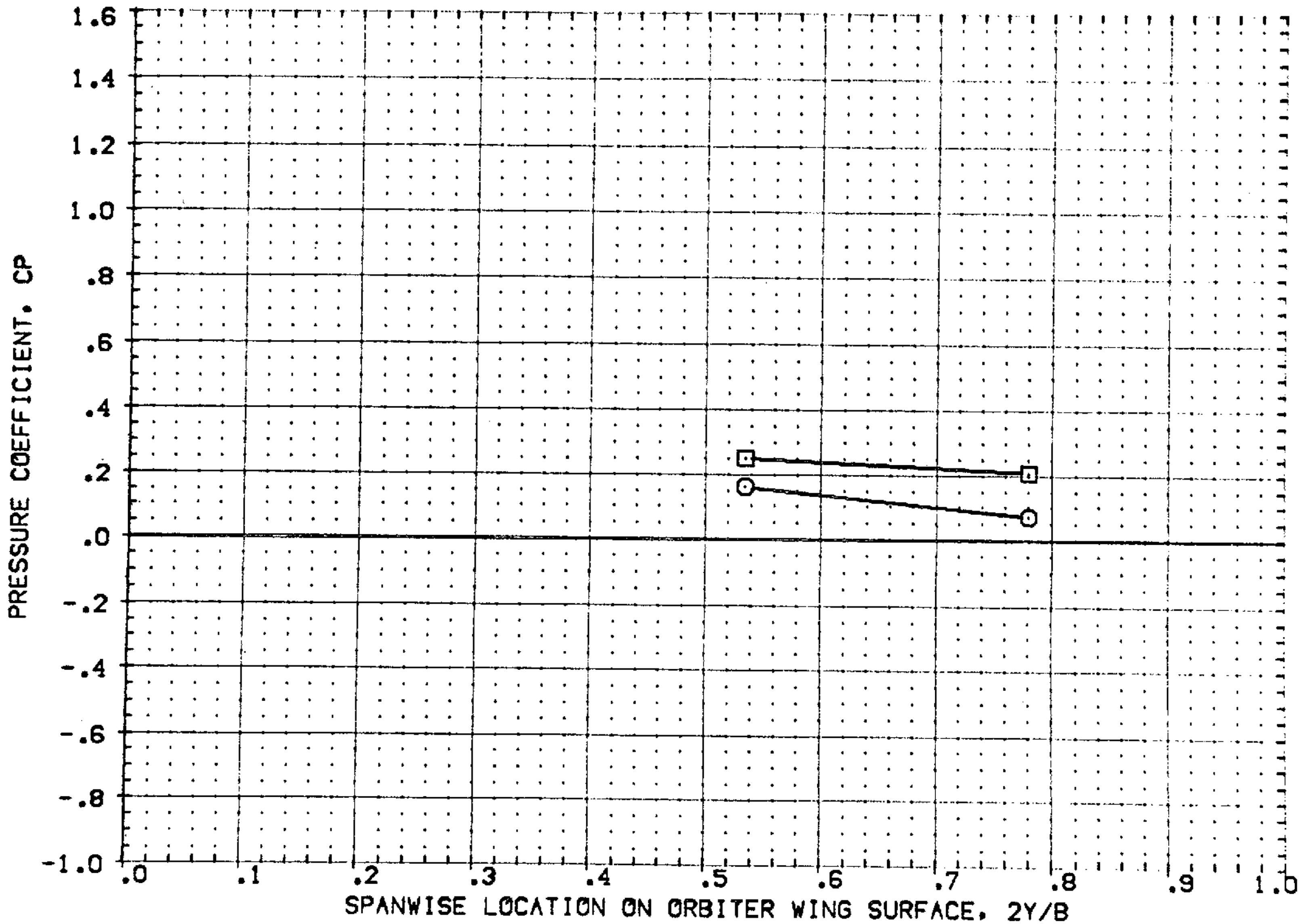


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.725	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 01 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

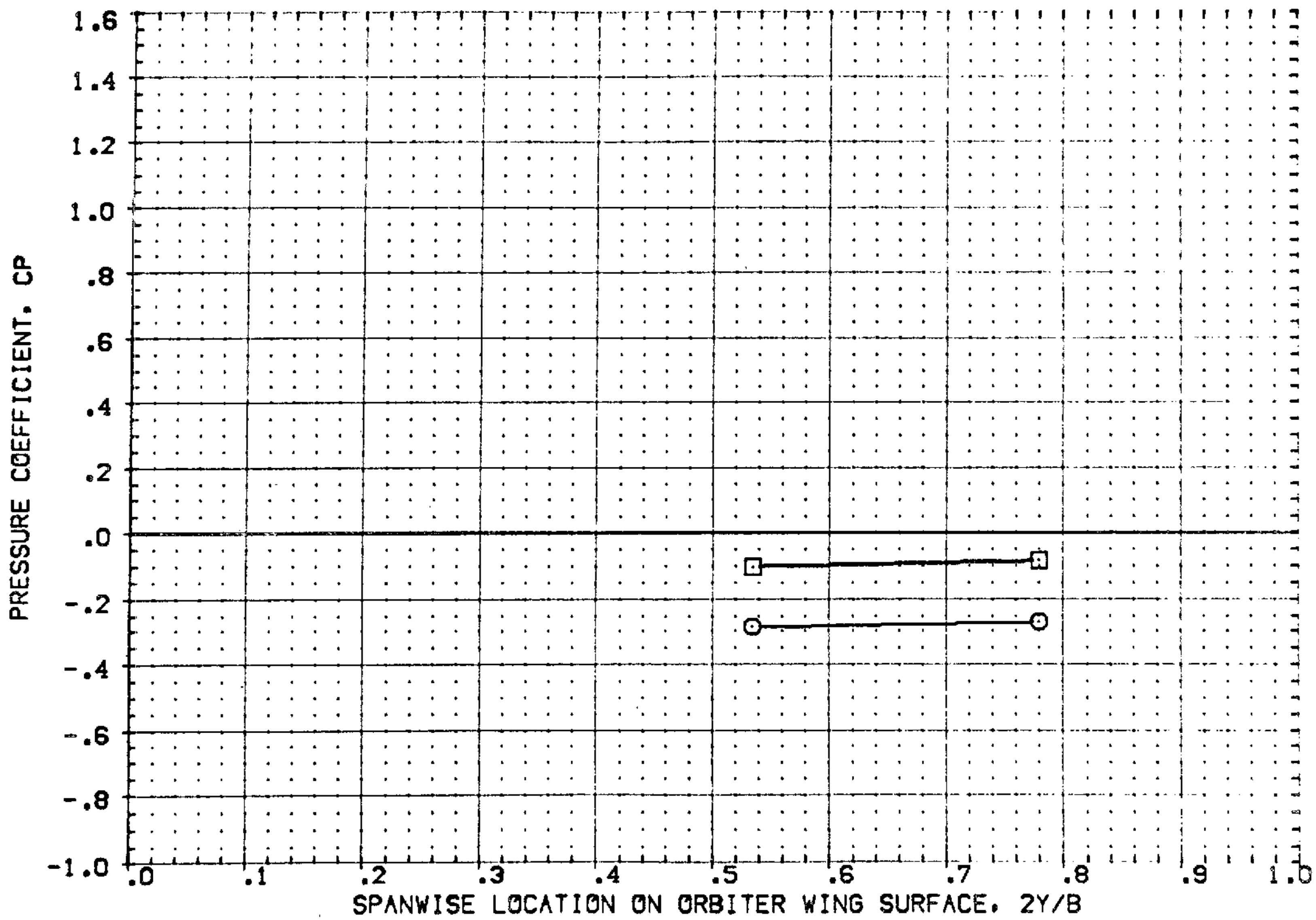


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/C	ALPHA
○	1.078	.950	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3L01)	OPEN	IA69 O1 T1 S1 P2 P6 WING LOWER SURFACE PRESS.	.0000	.0000	.0000

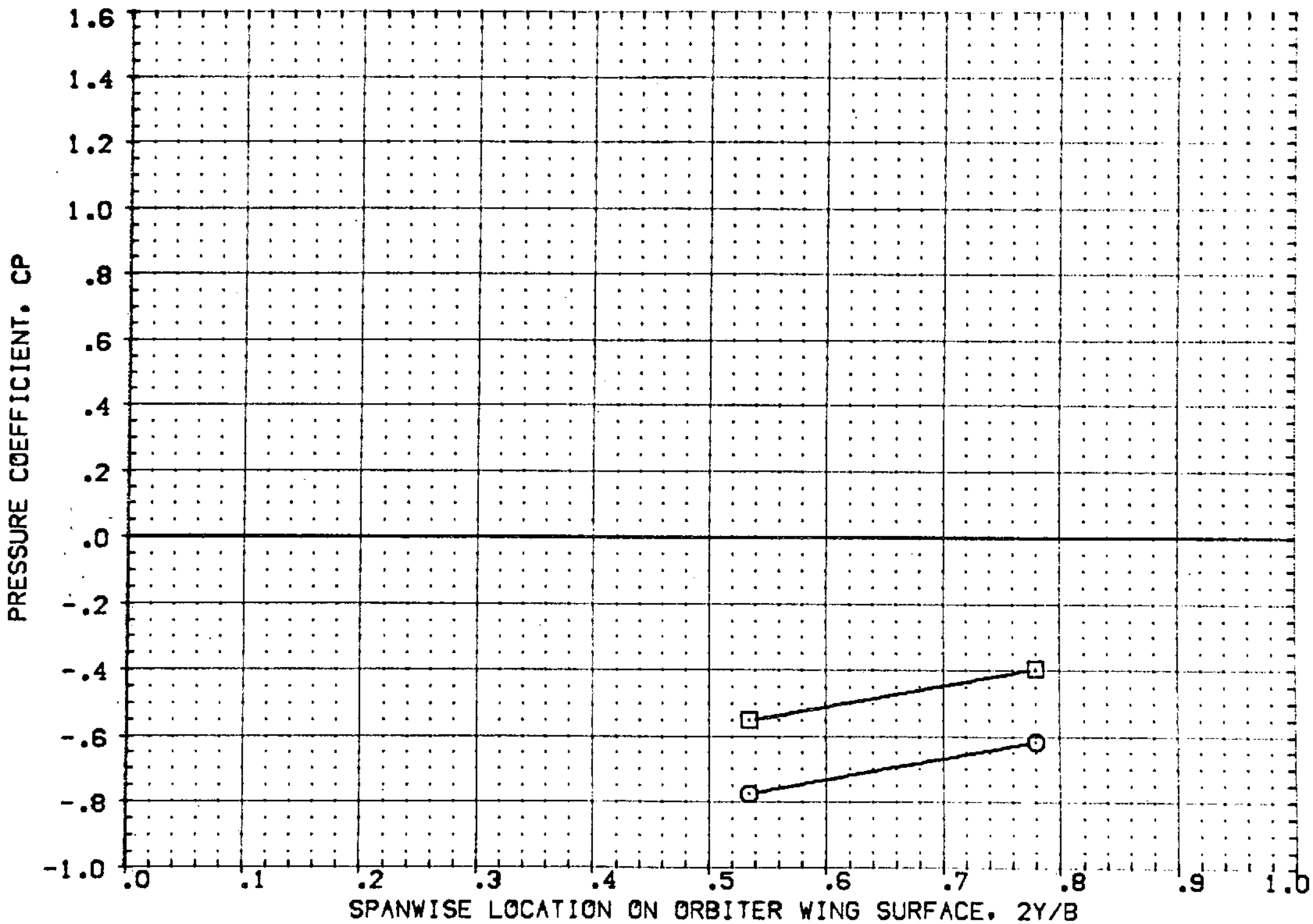


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	.000	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

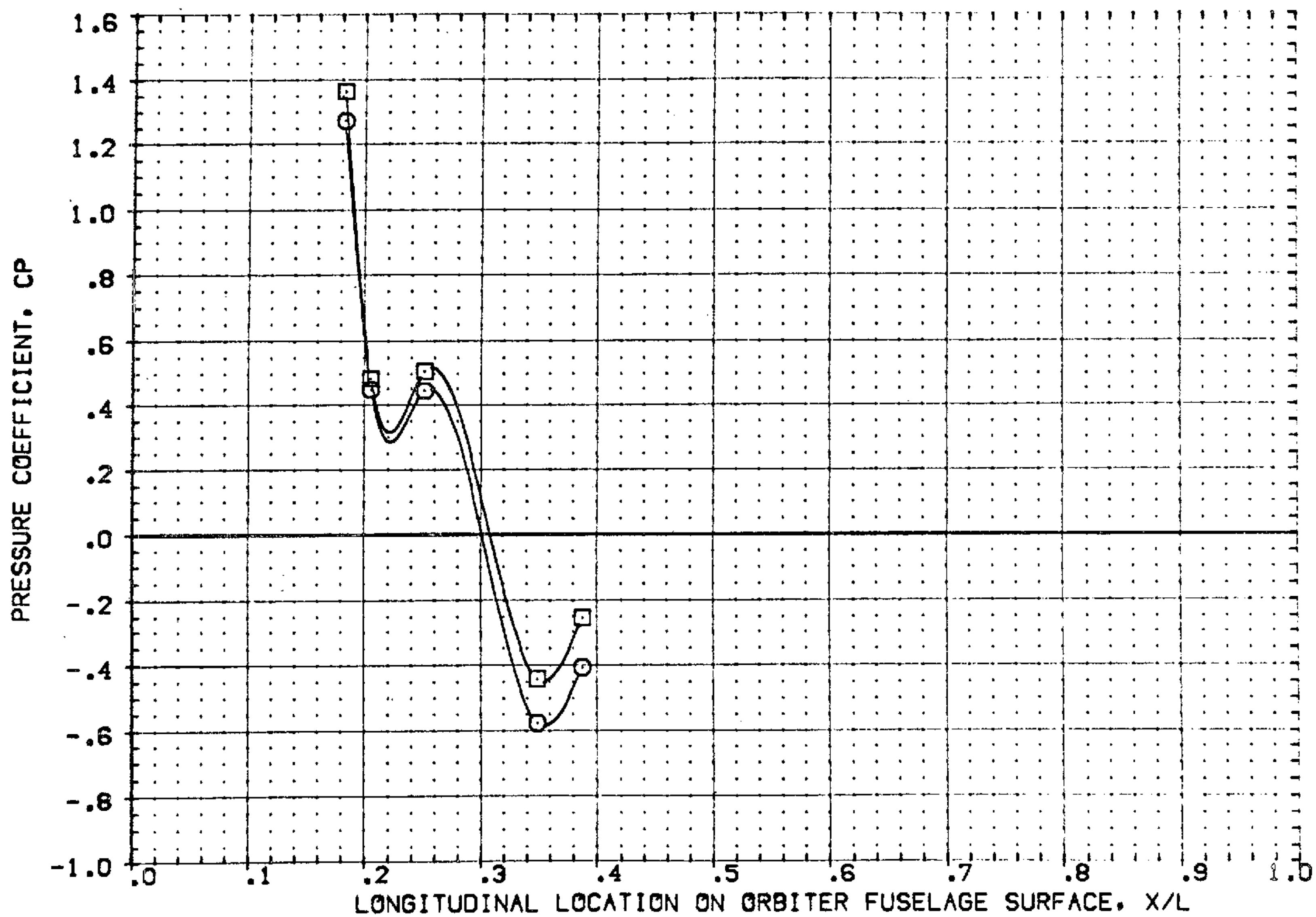


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

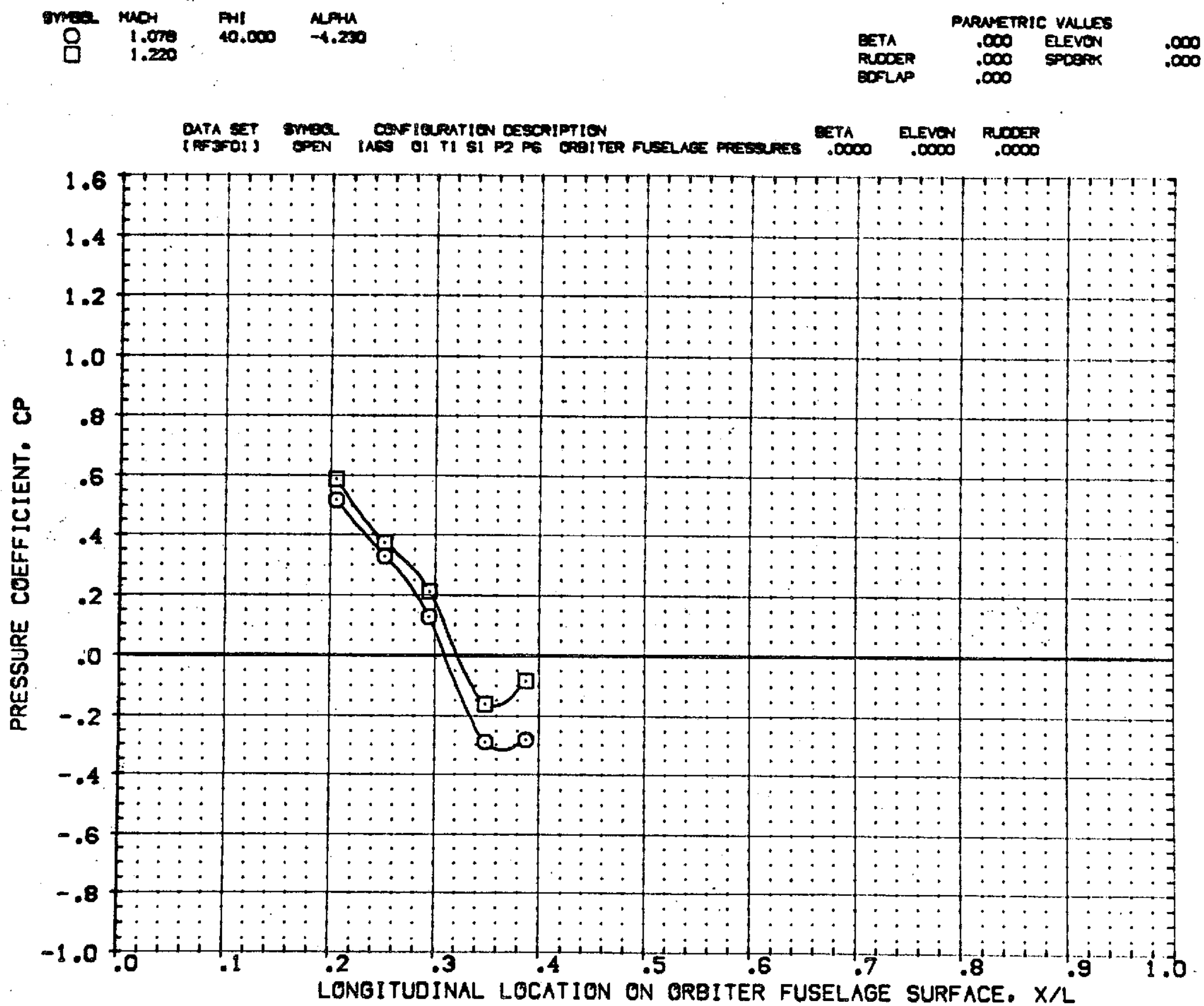


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	90.000	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

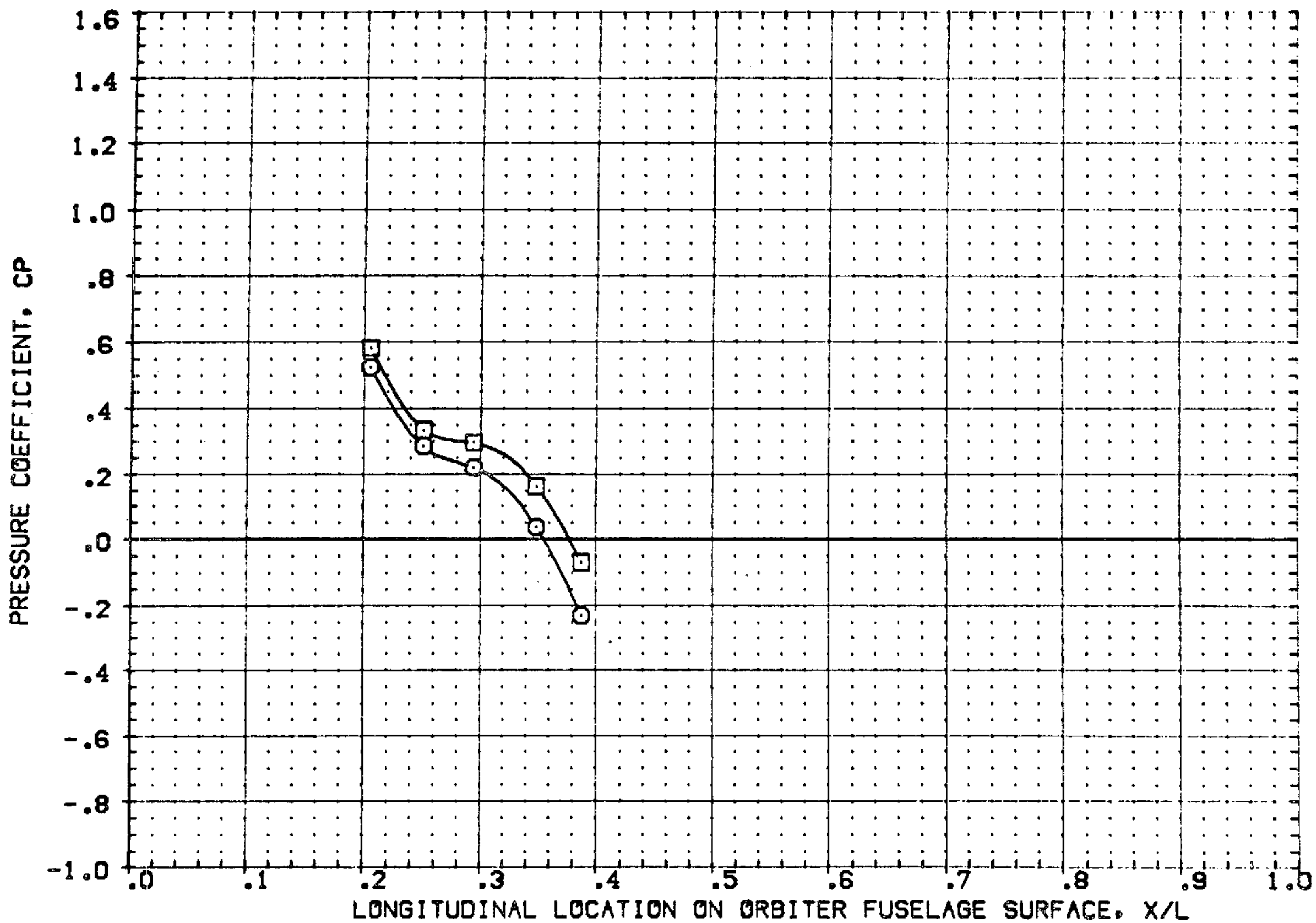


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	180.000	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	1A69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

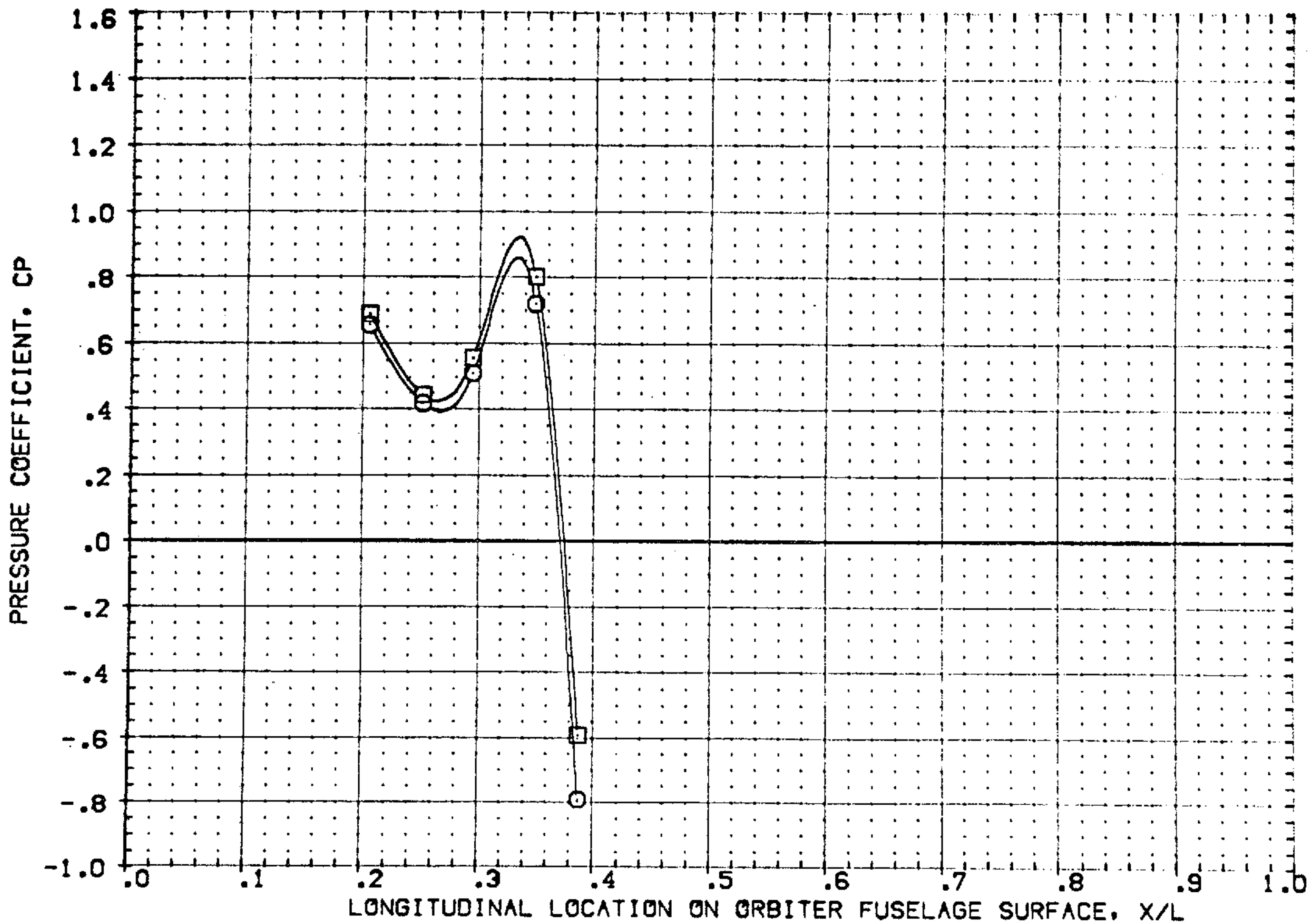


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

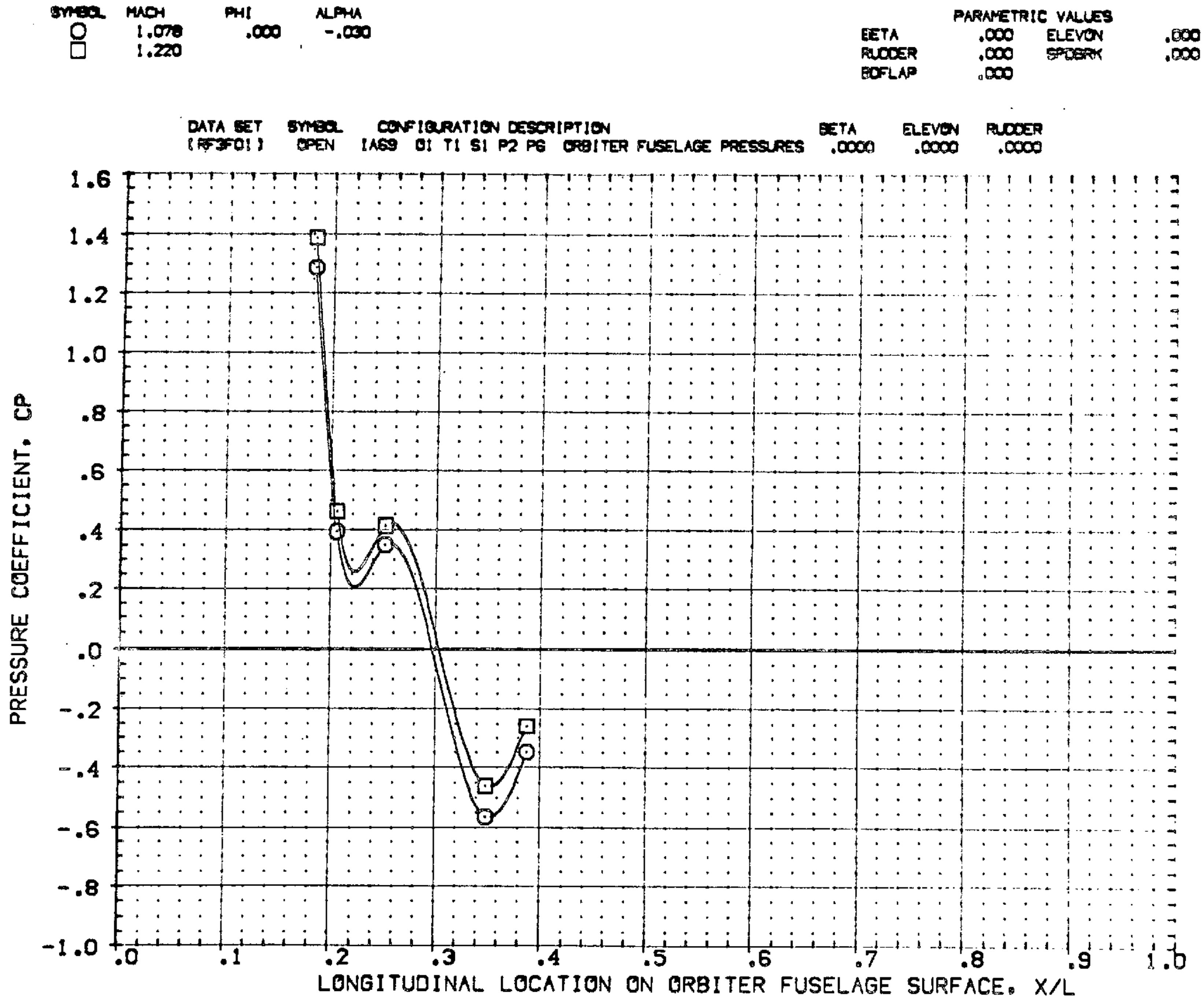


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

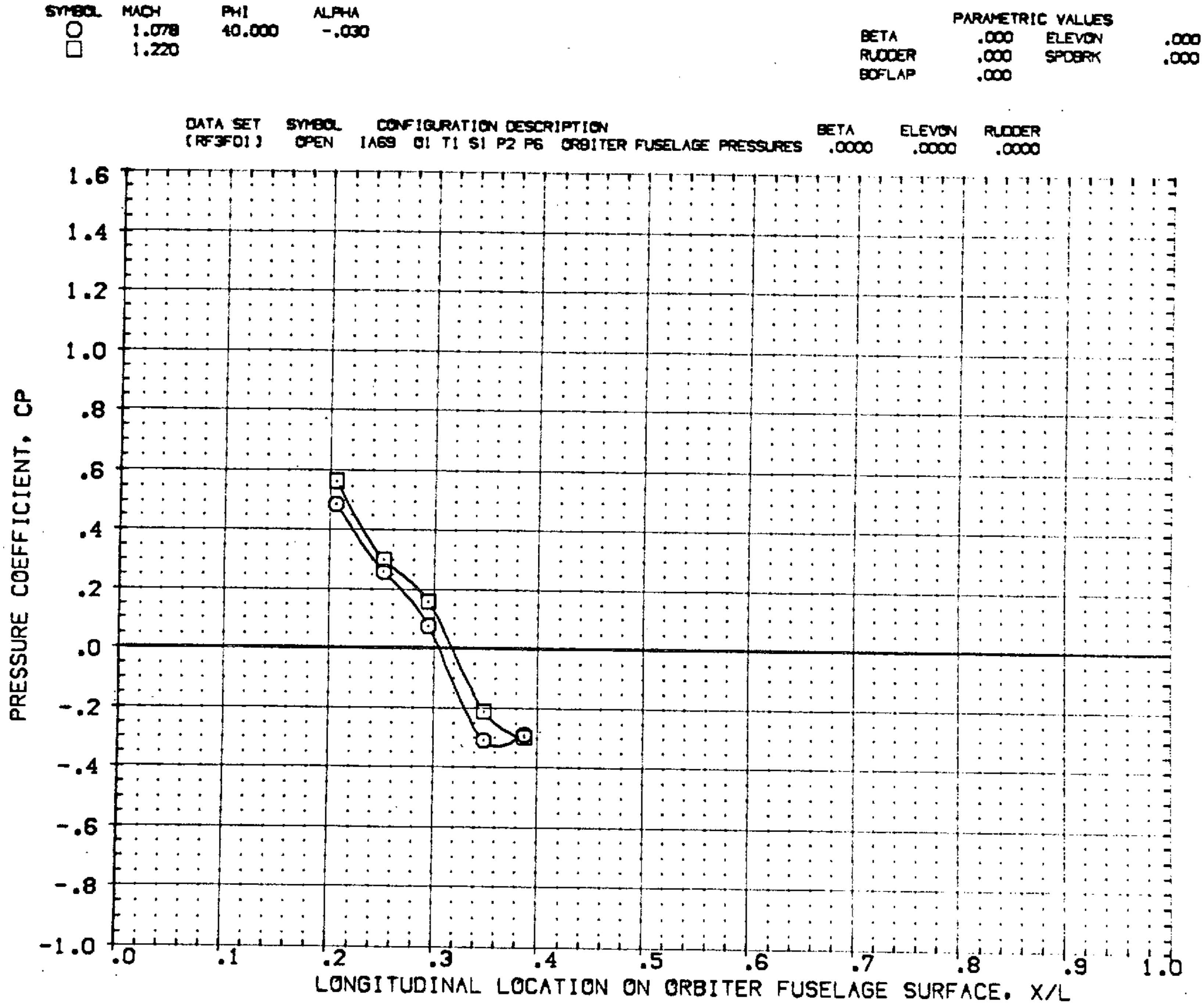


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	90.000	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	180.000	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

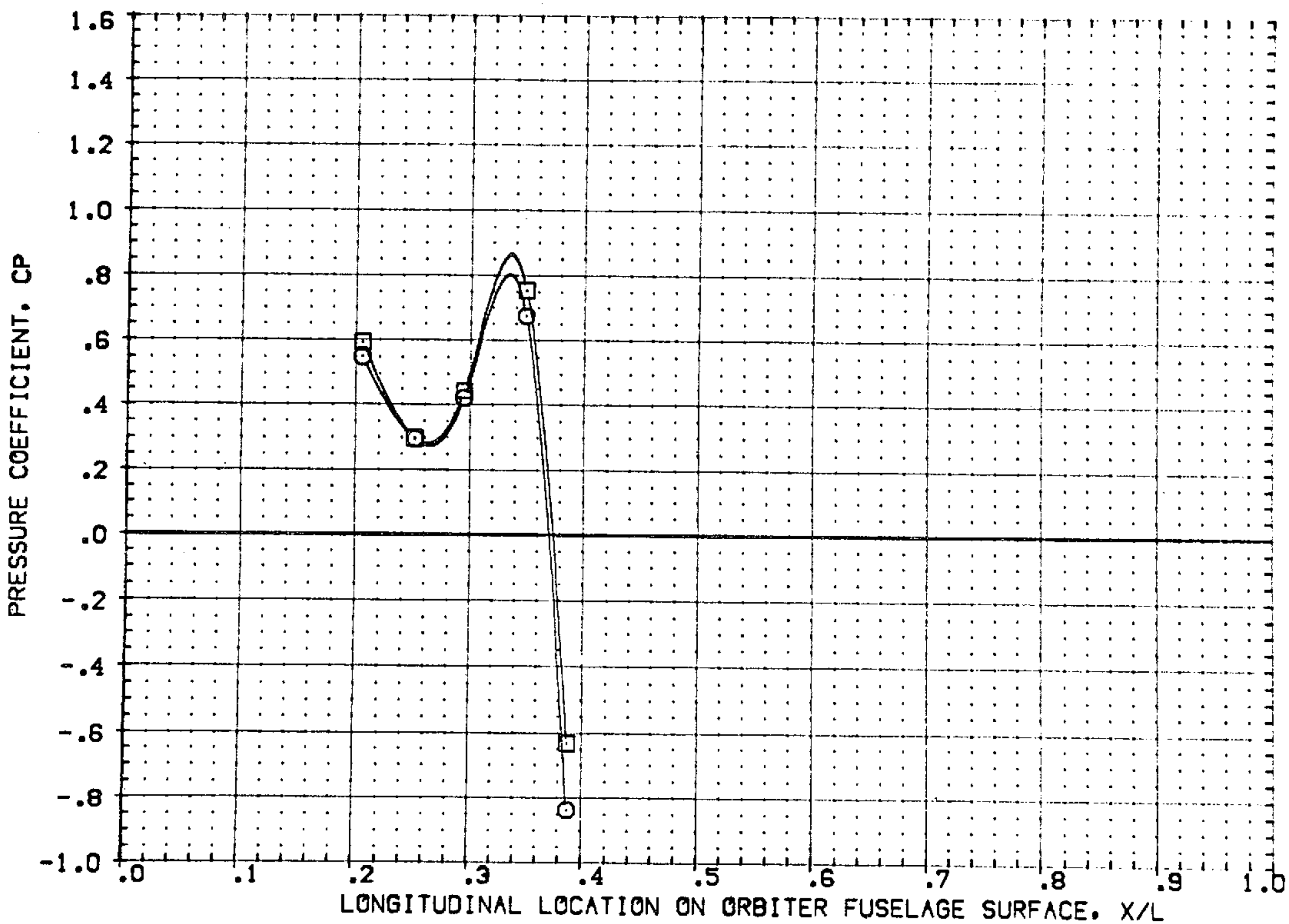


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	.000	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

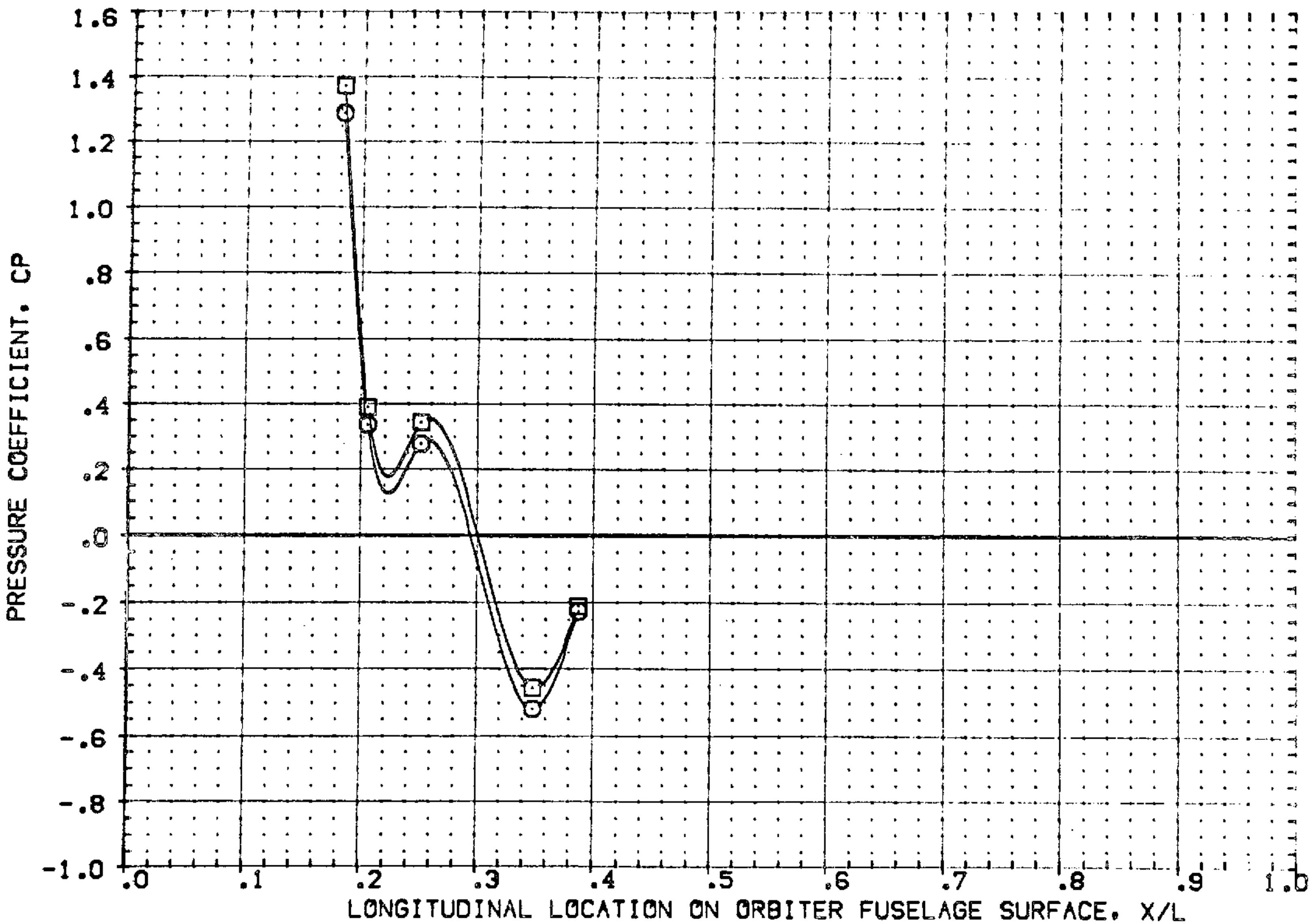


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	PHI	ALPHA
○	1.078	40.000	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

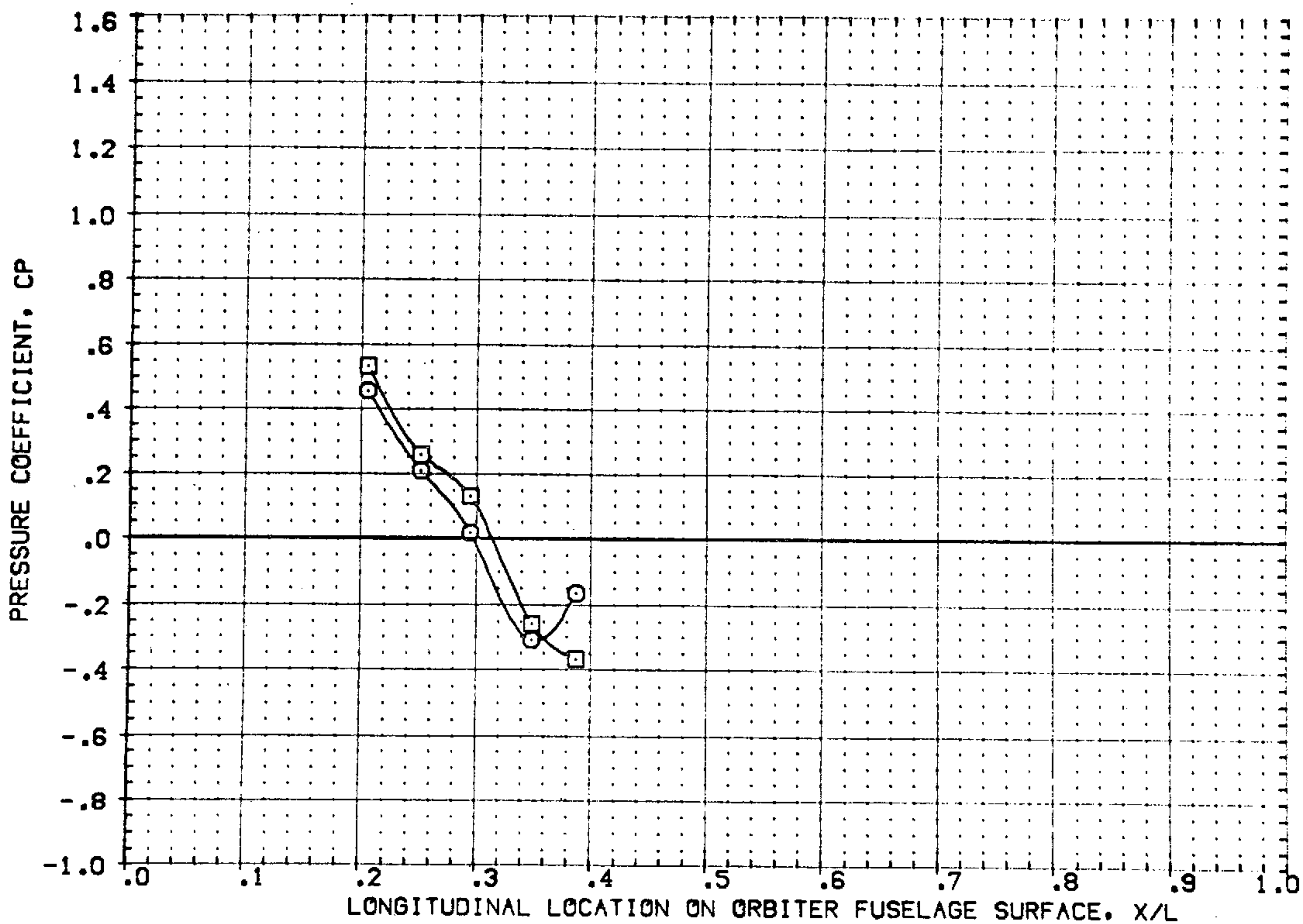


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

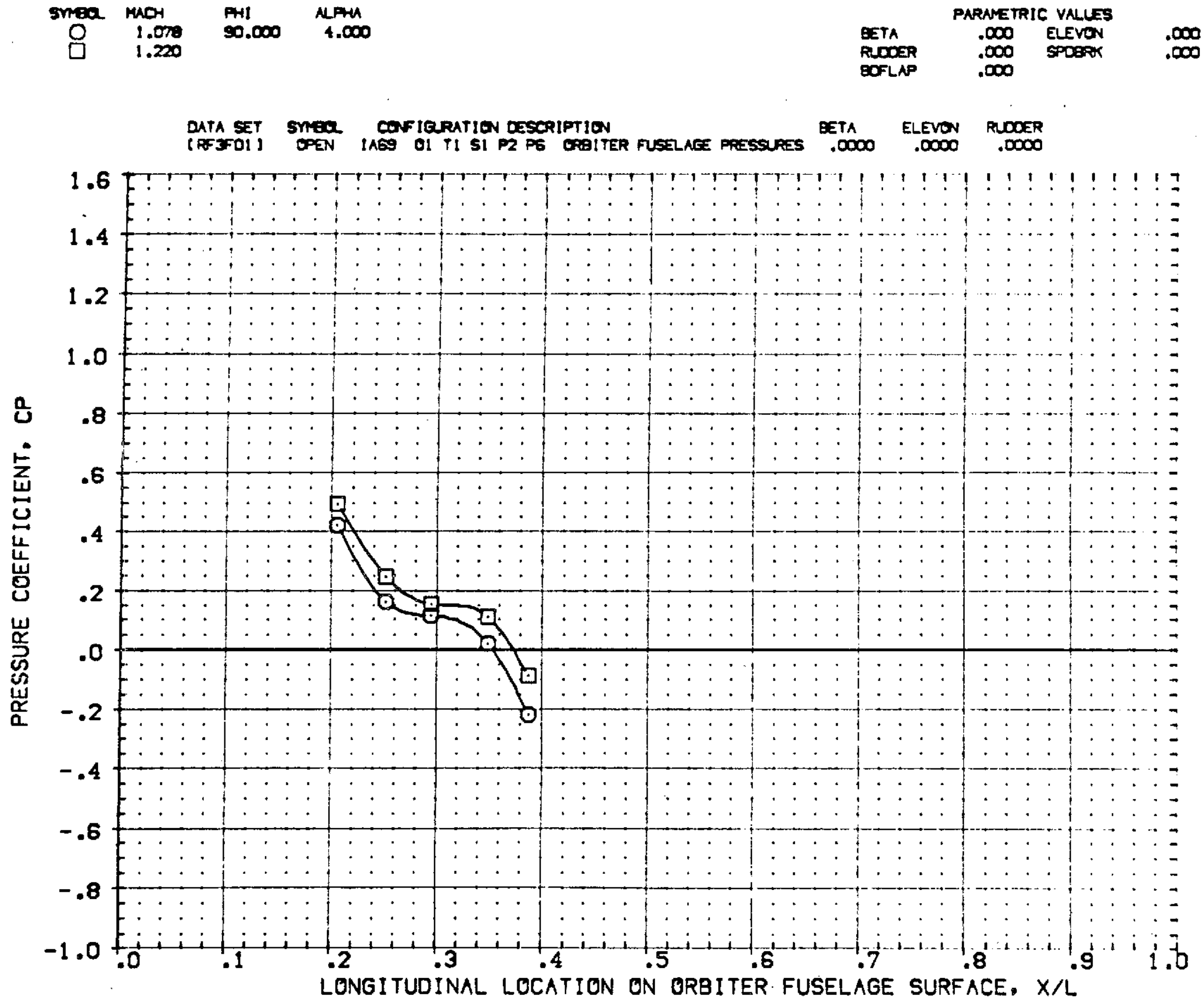


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

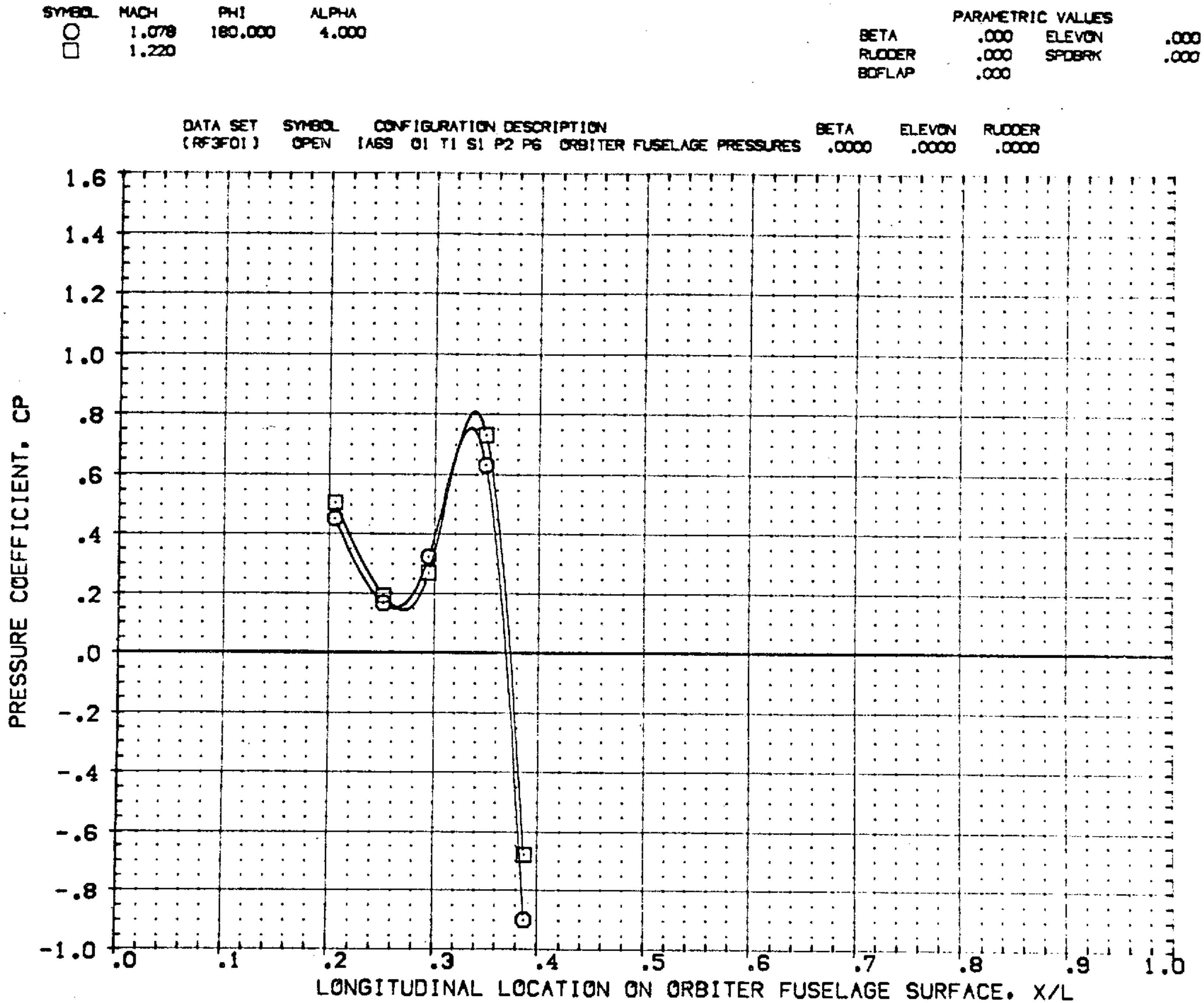


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.182	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

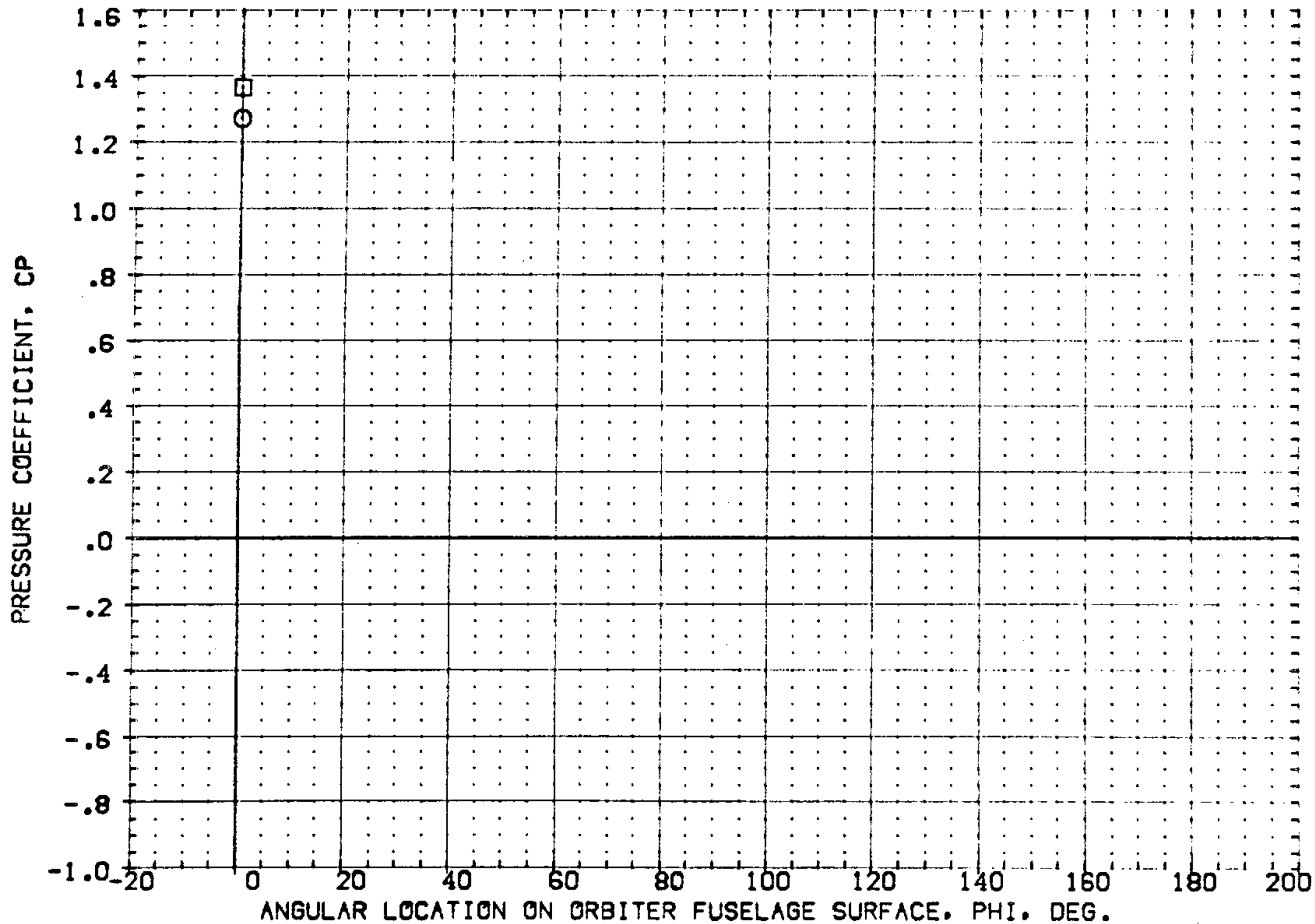


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.205	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

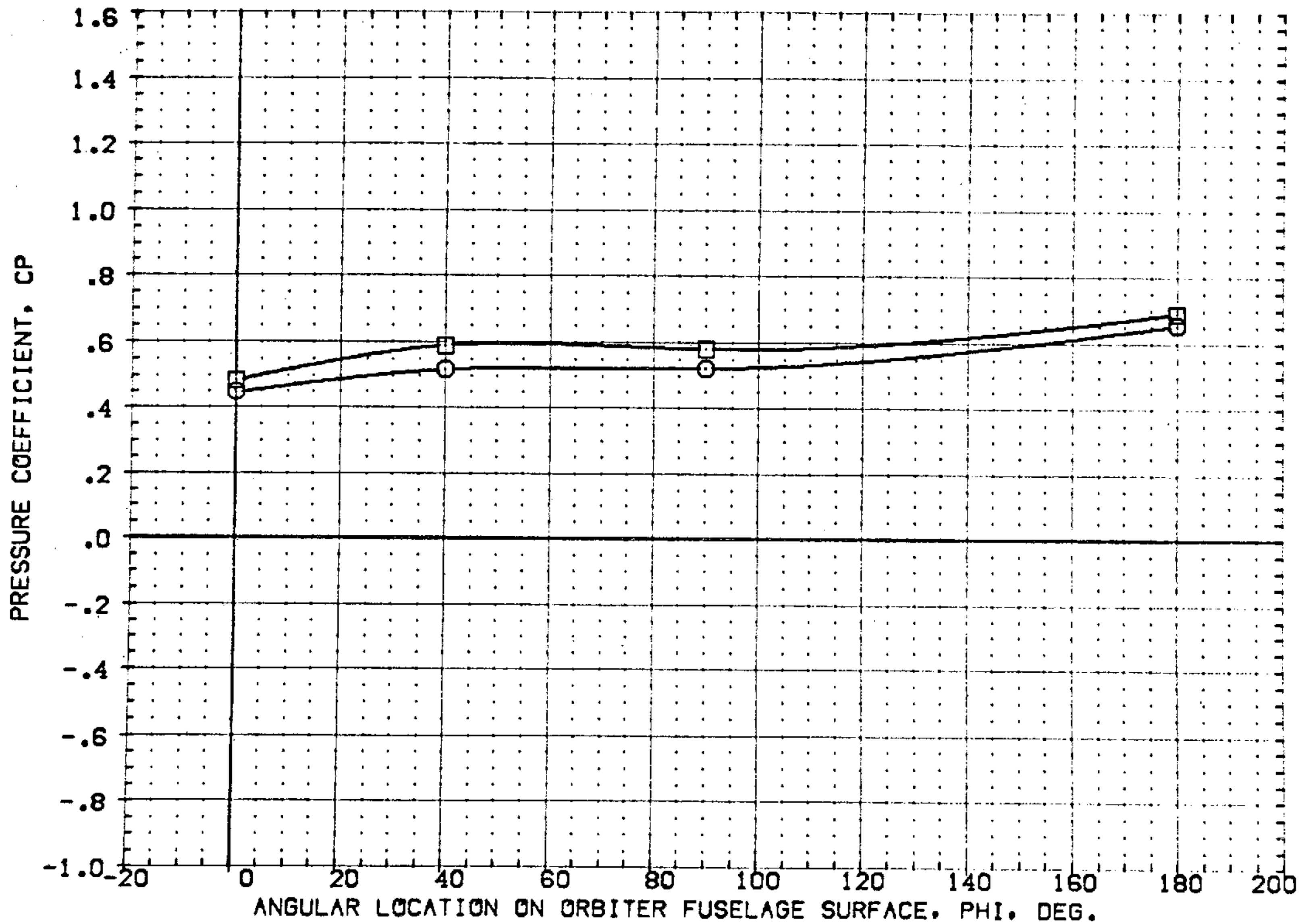


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.252	-4.230
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

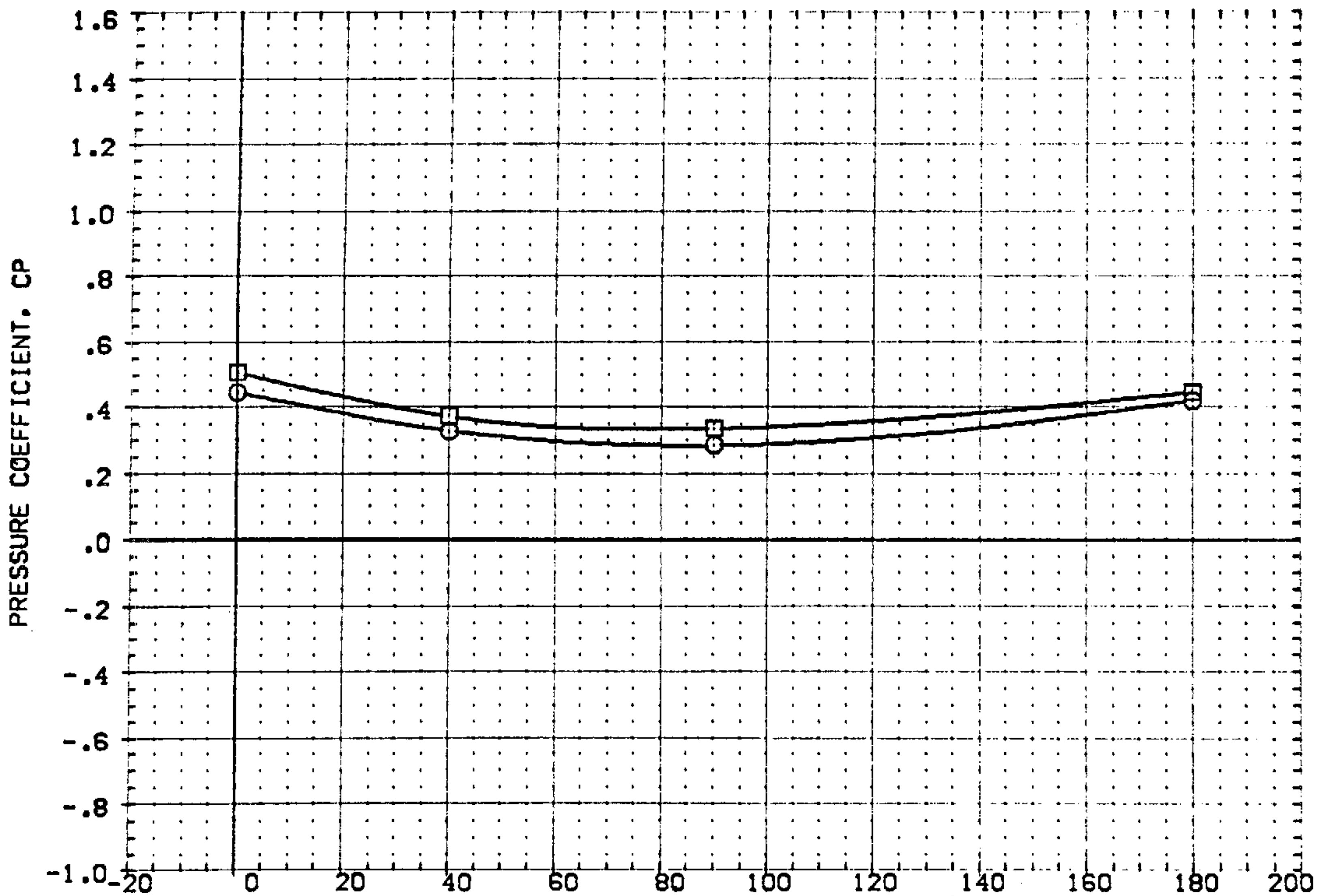


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

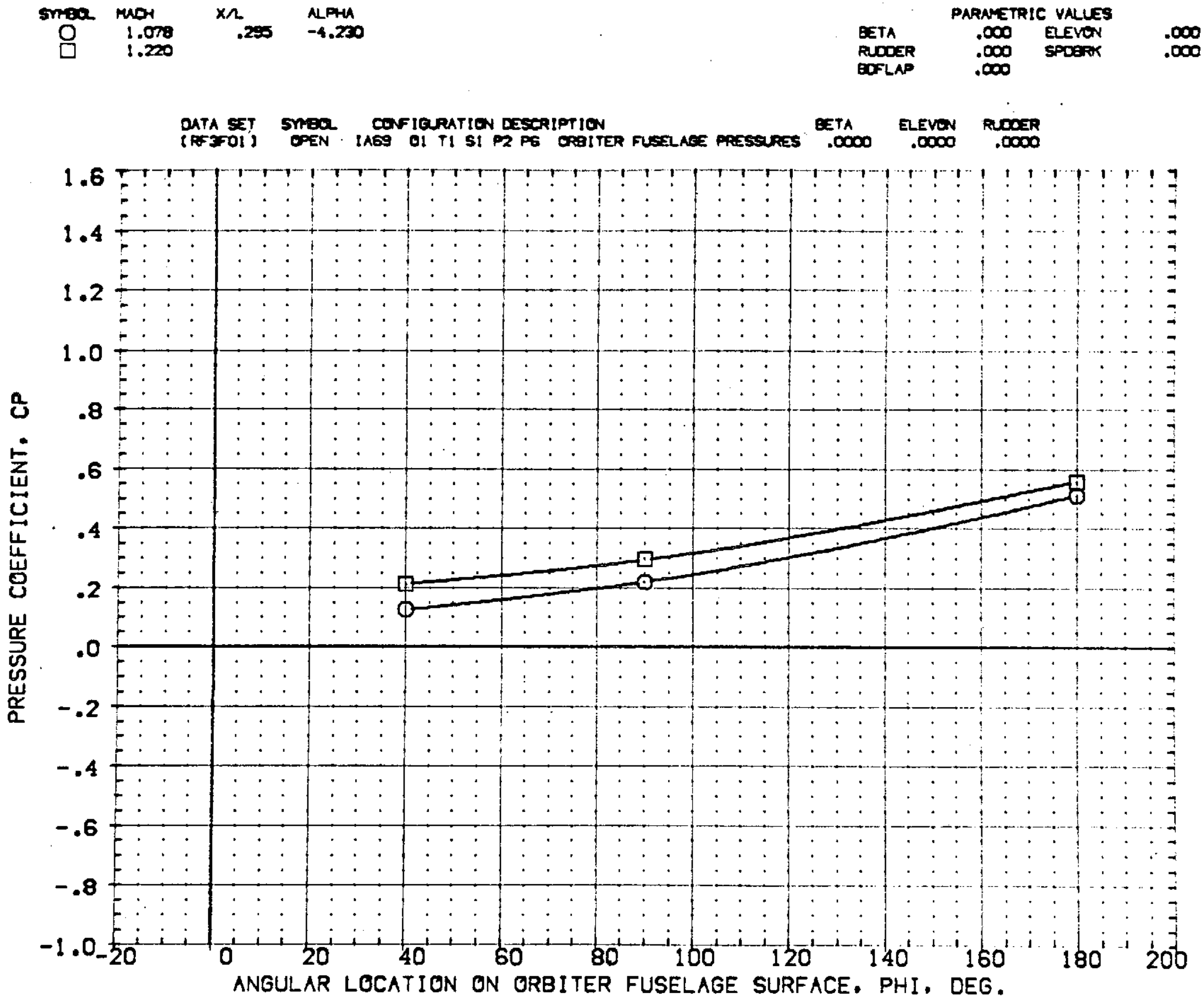


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

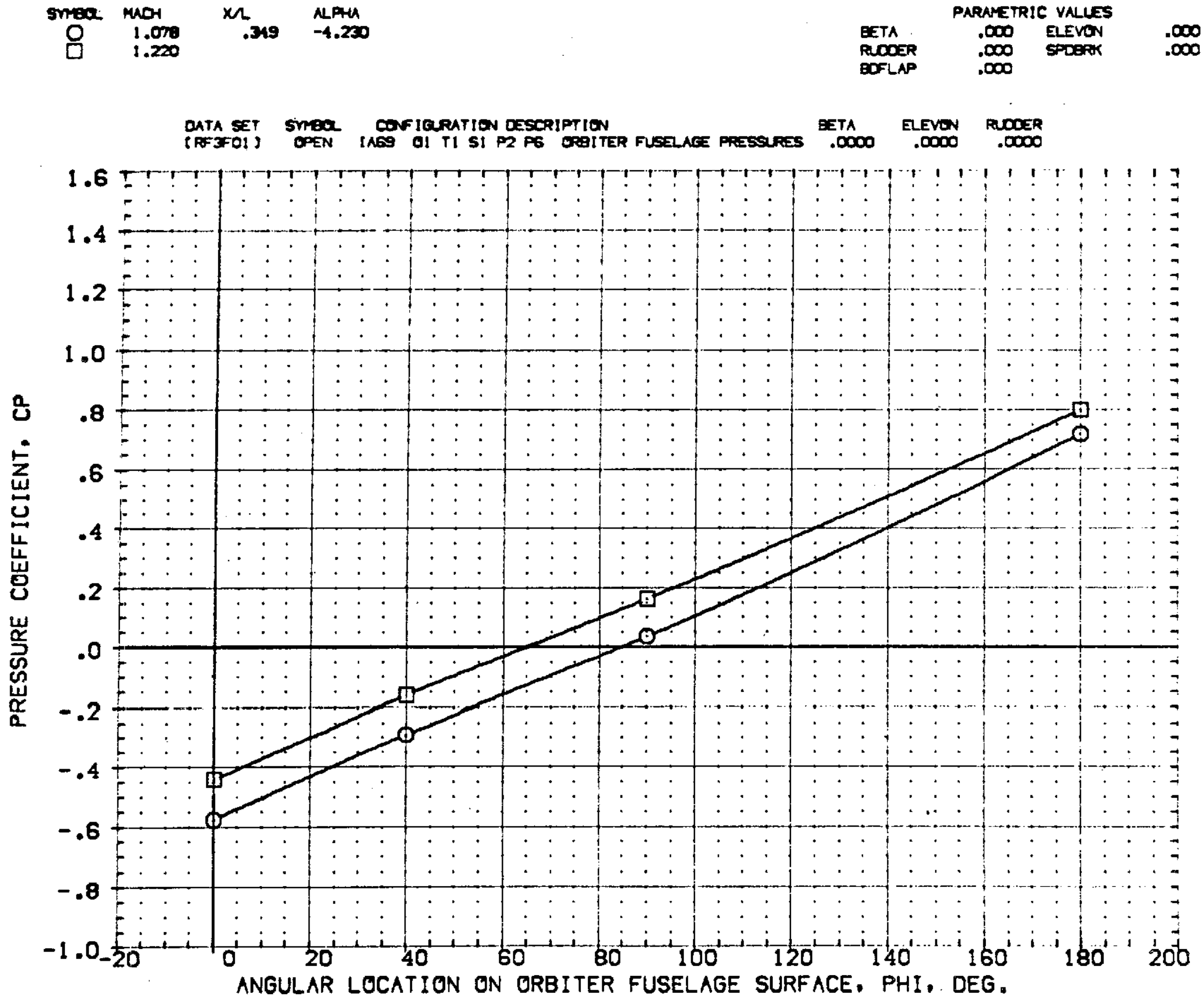


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

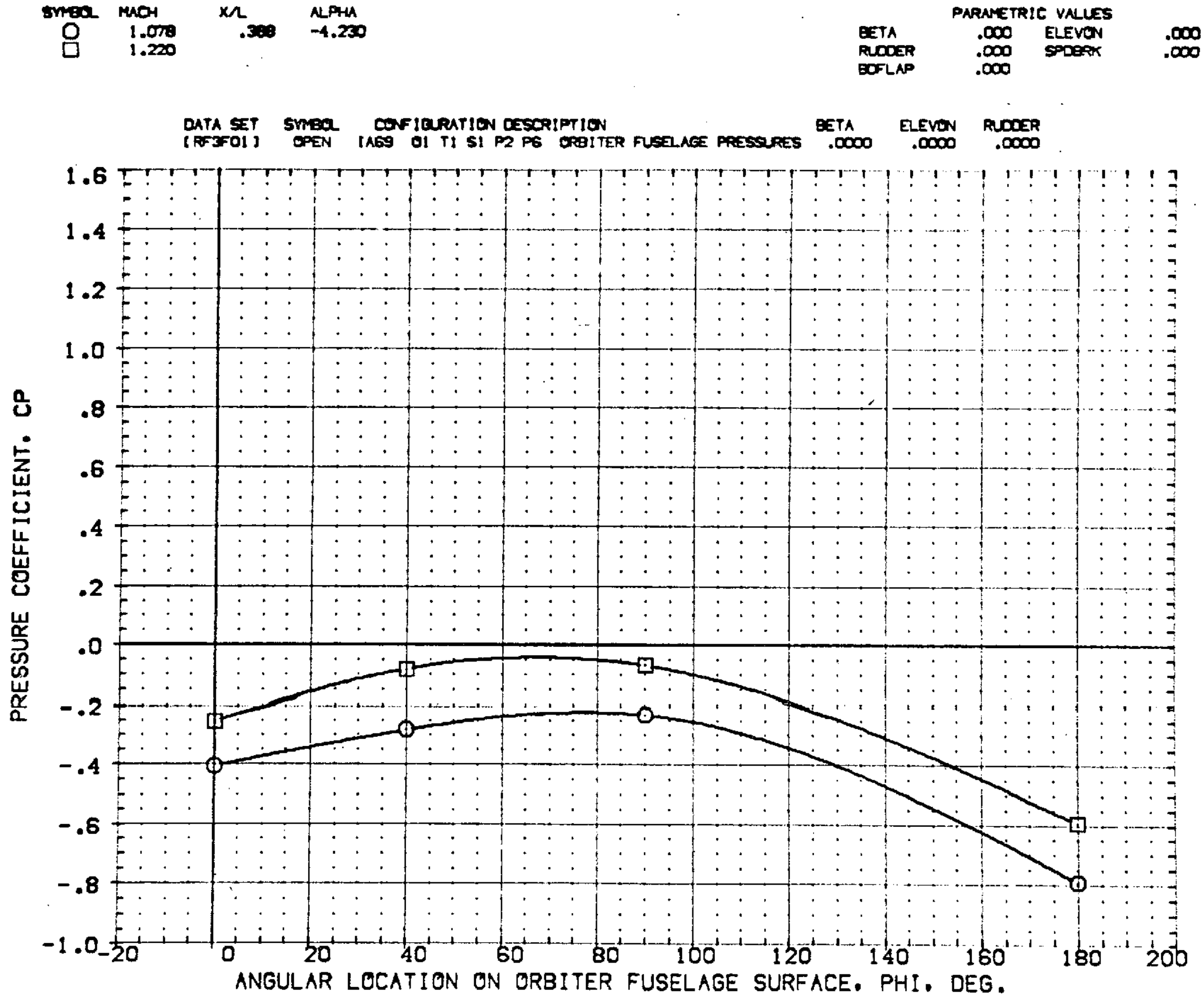


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.182	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

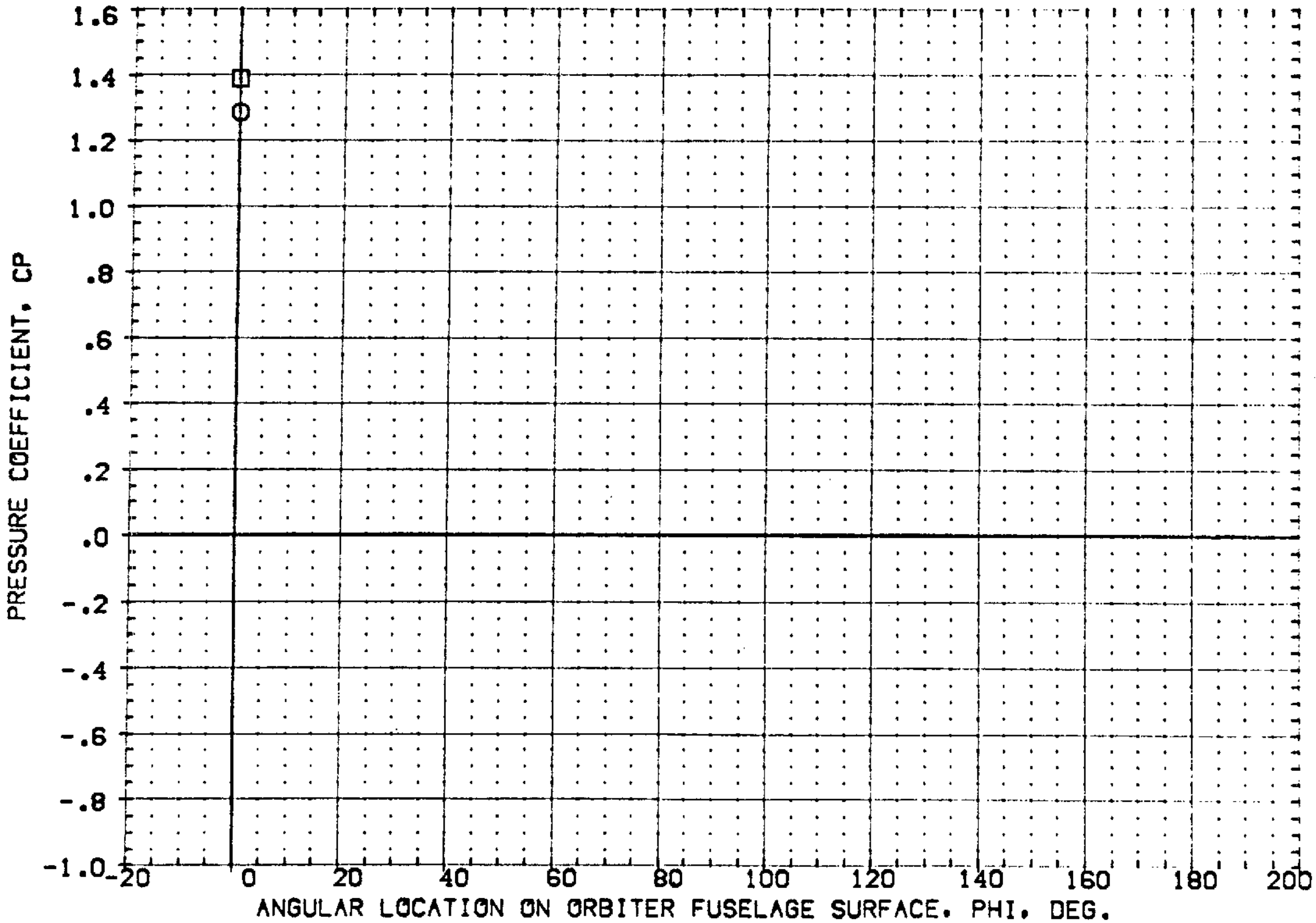


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

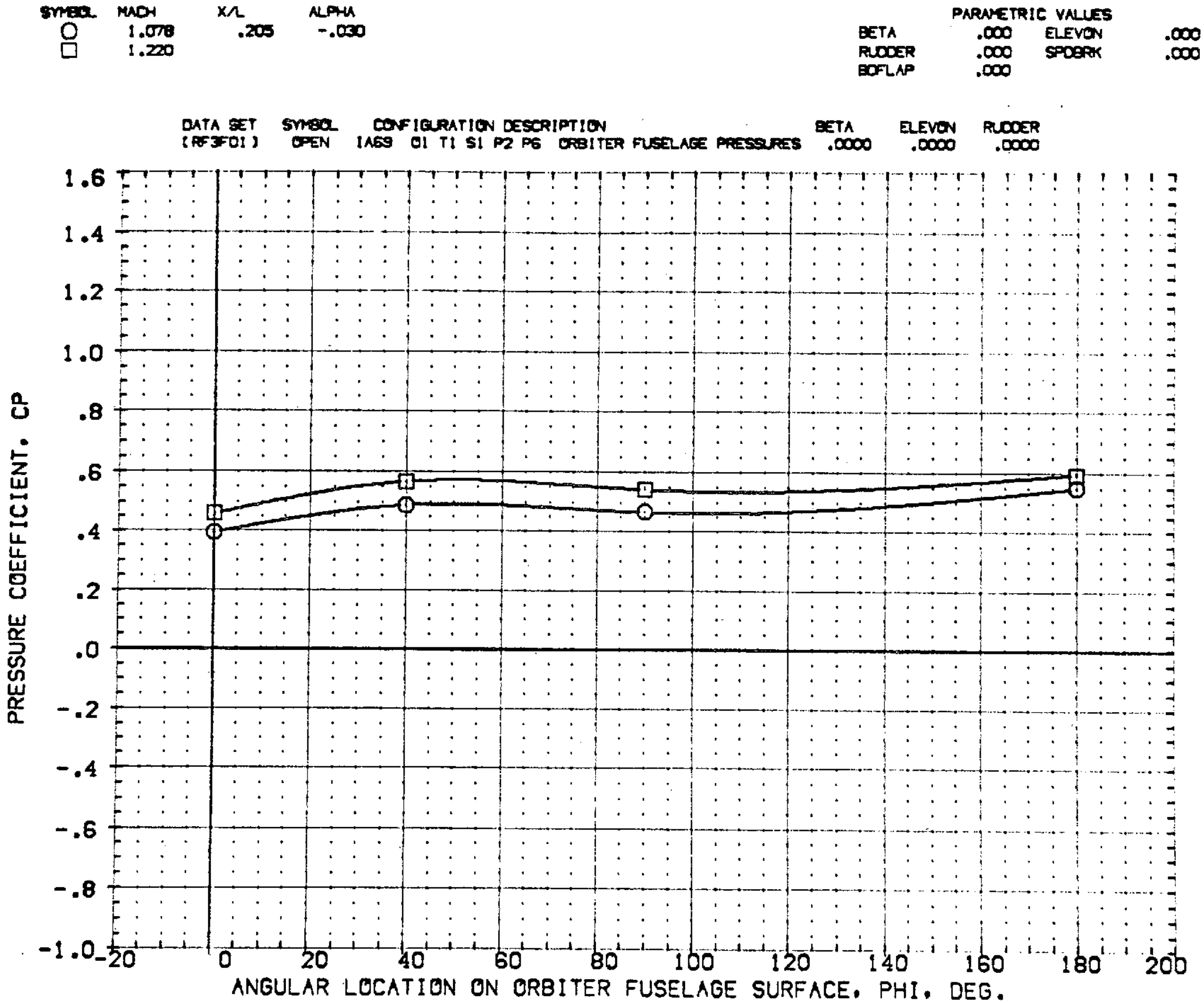


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.252	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

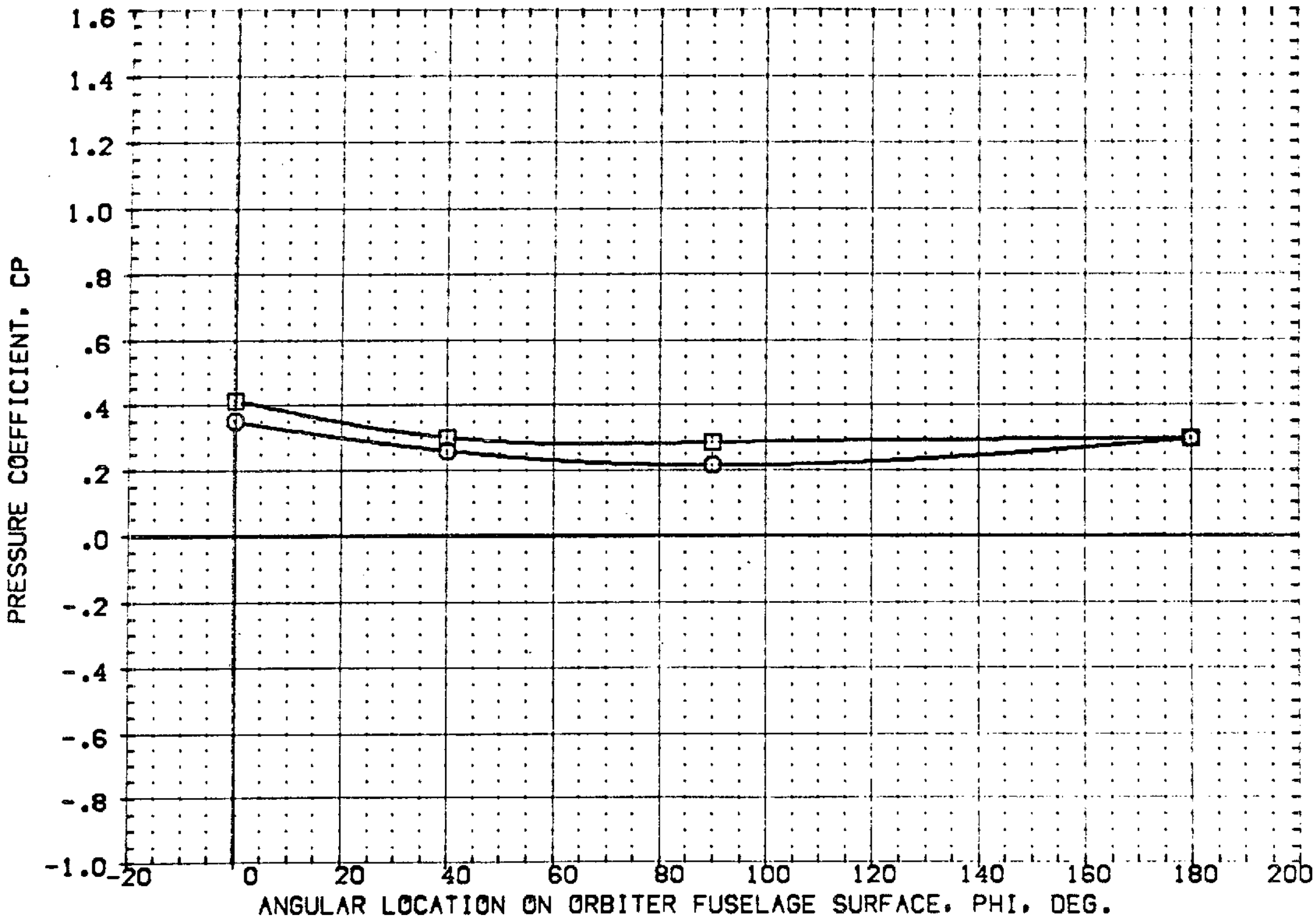


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

C.9

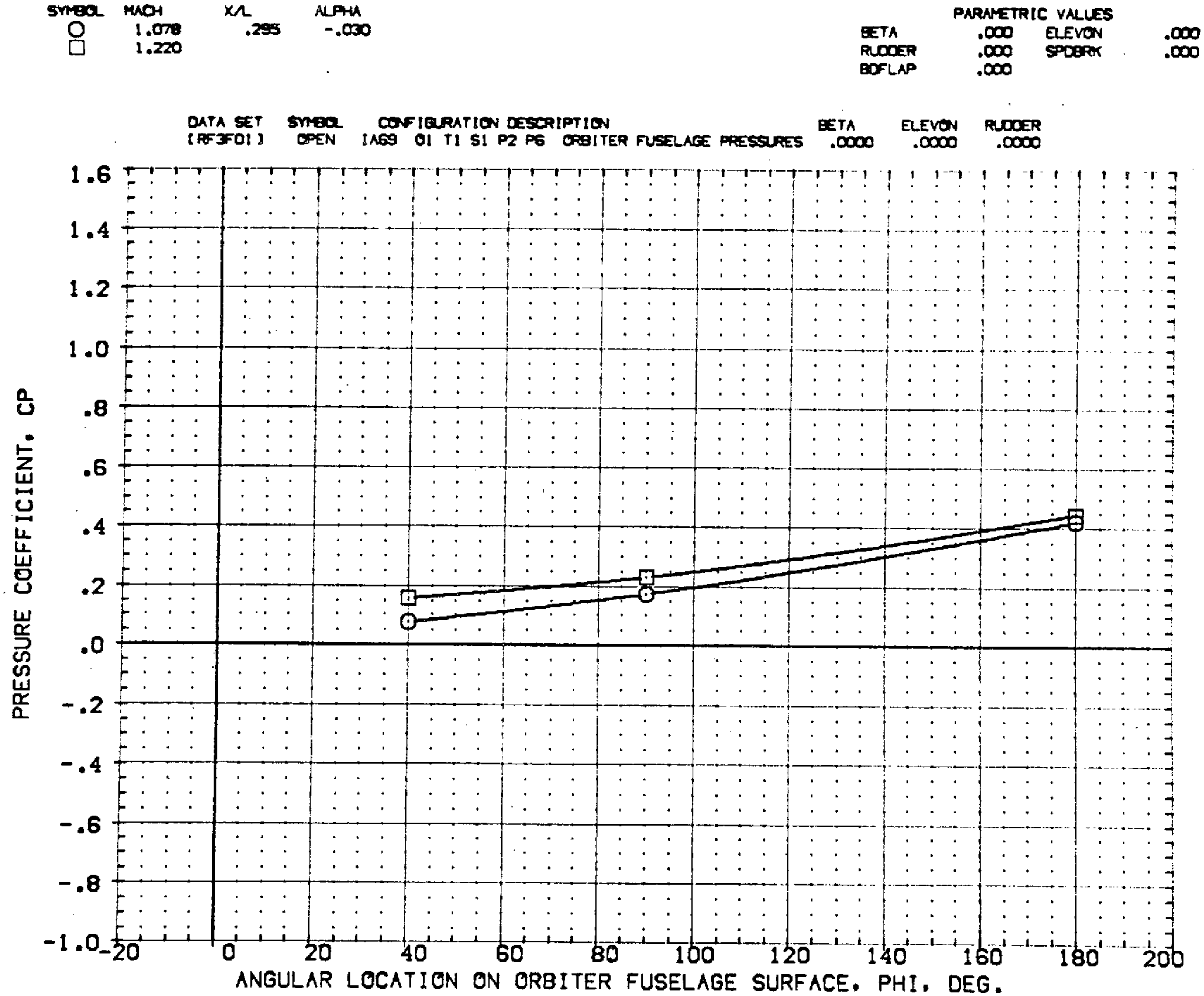


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.349	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

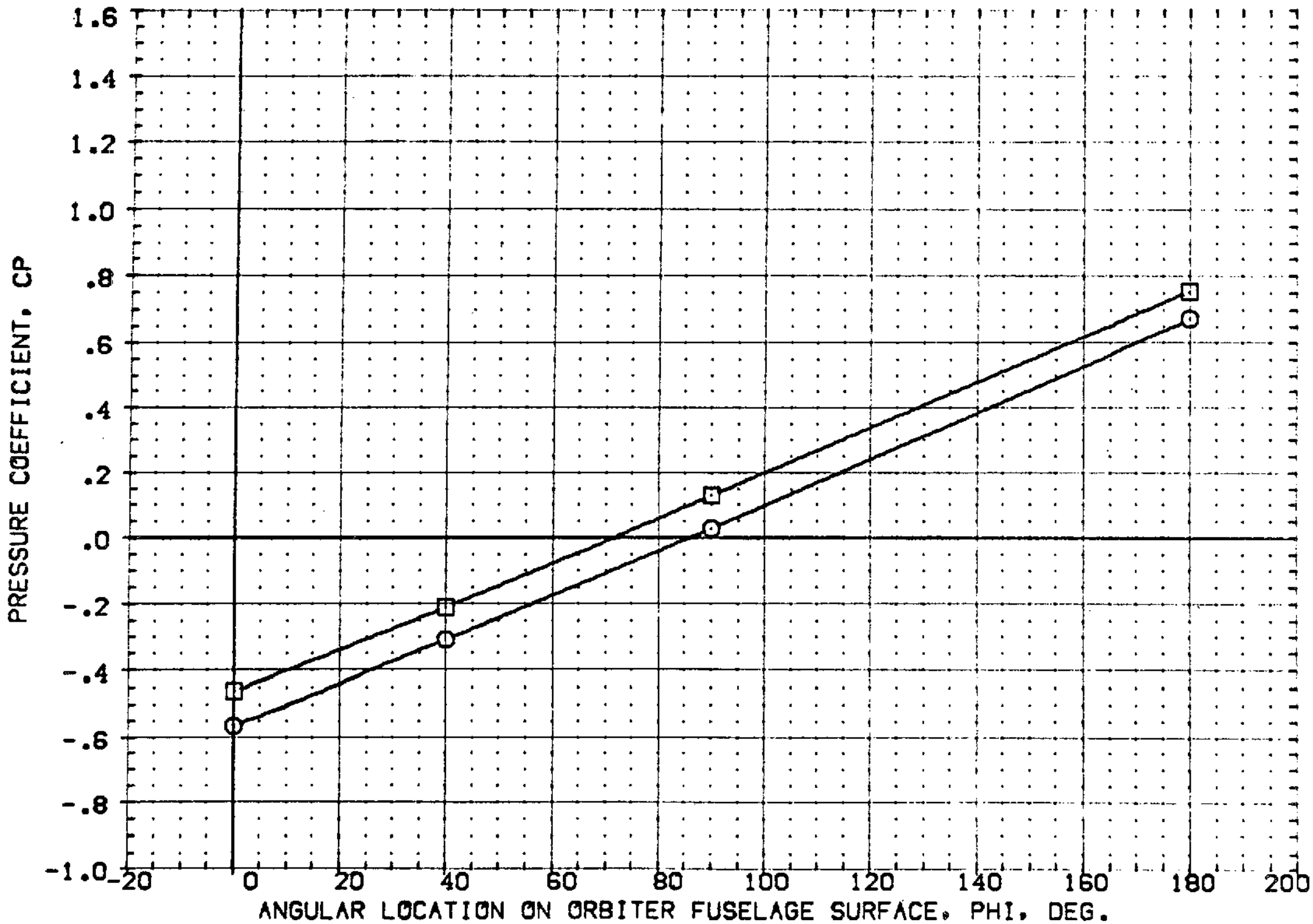


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.388	-.030
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

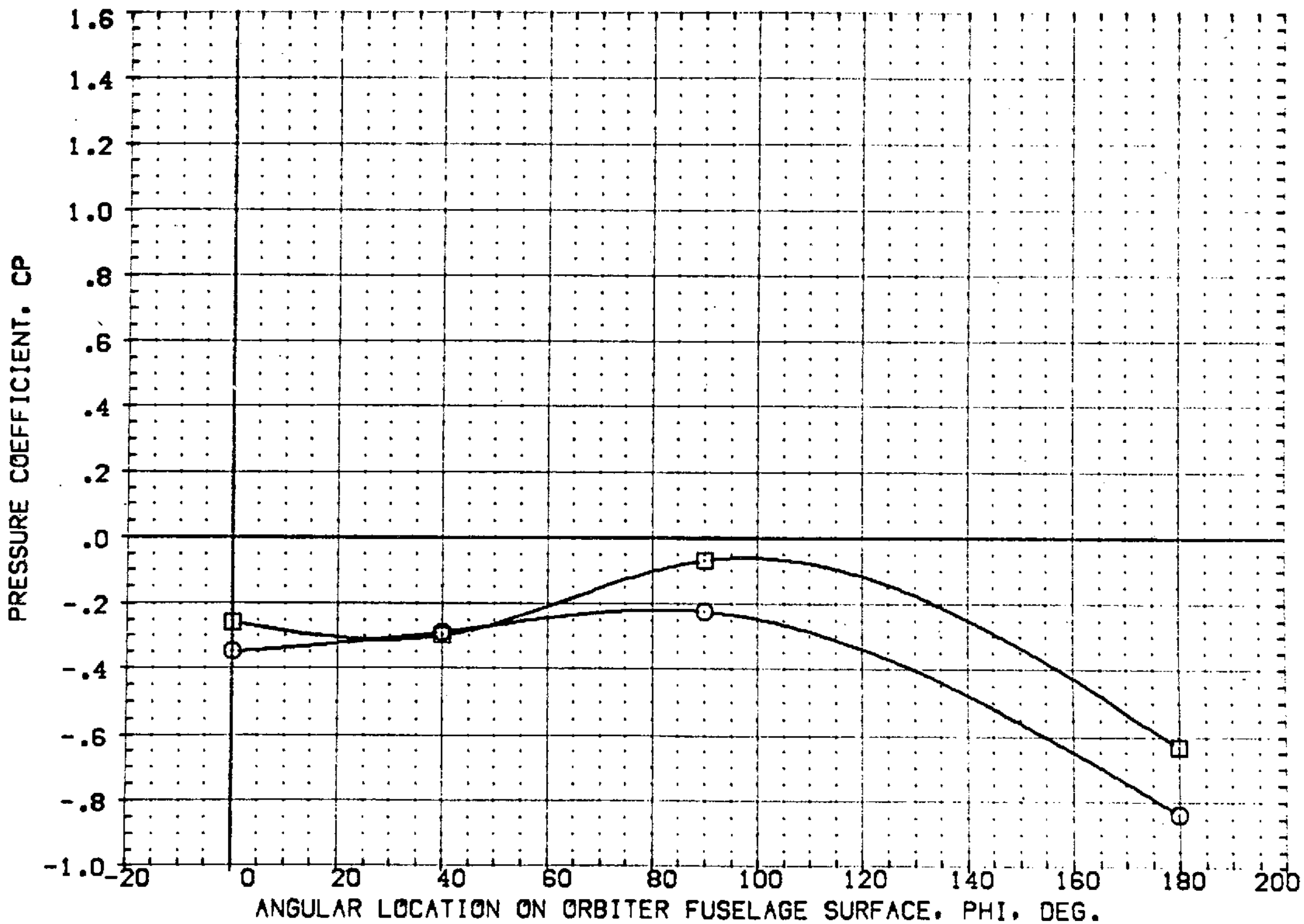


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.182	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

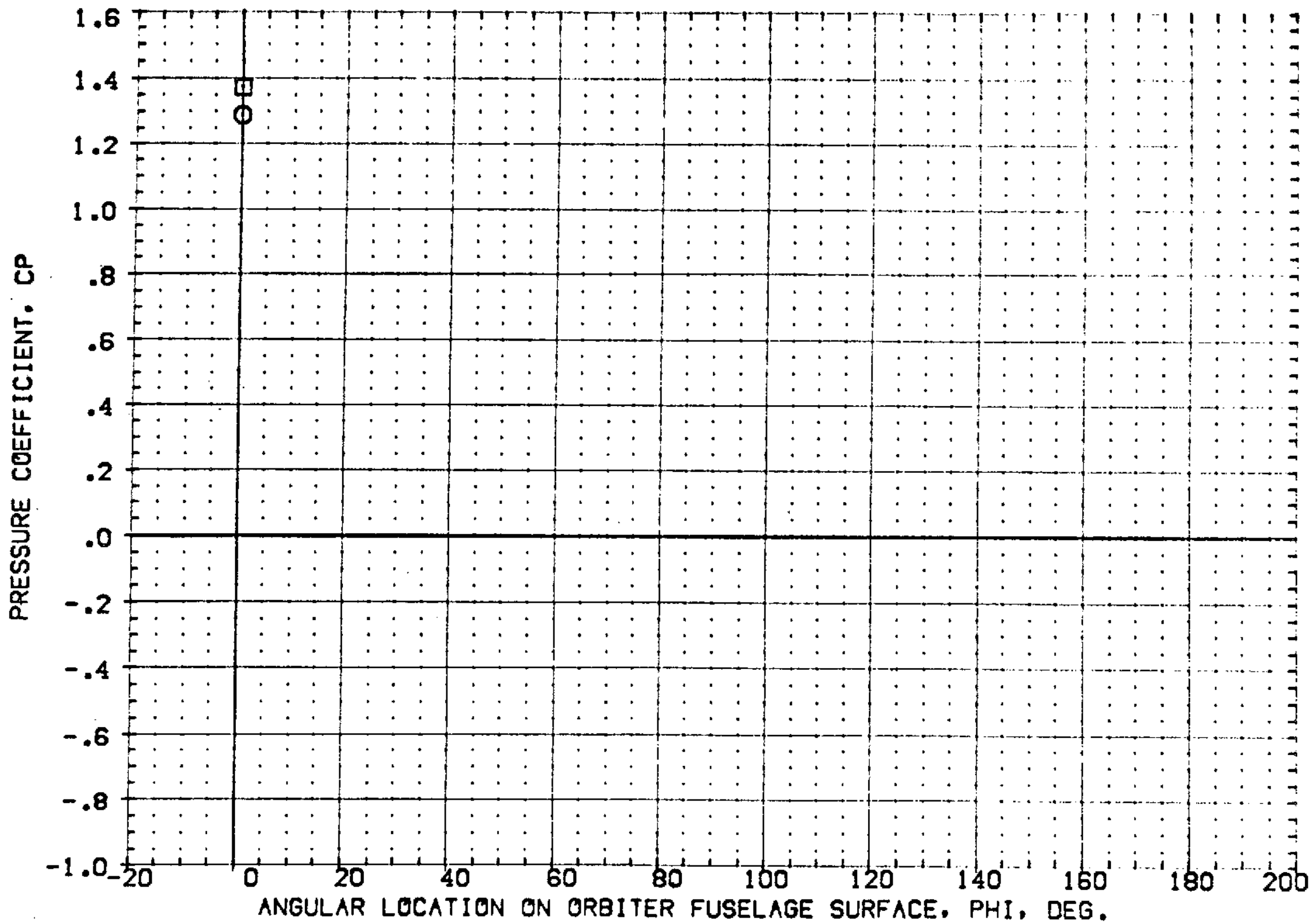


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

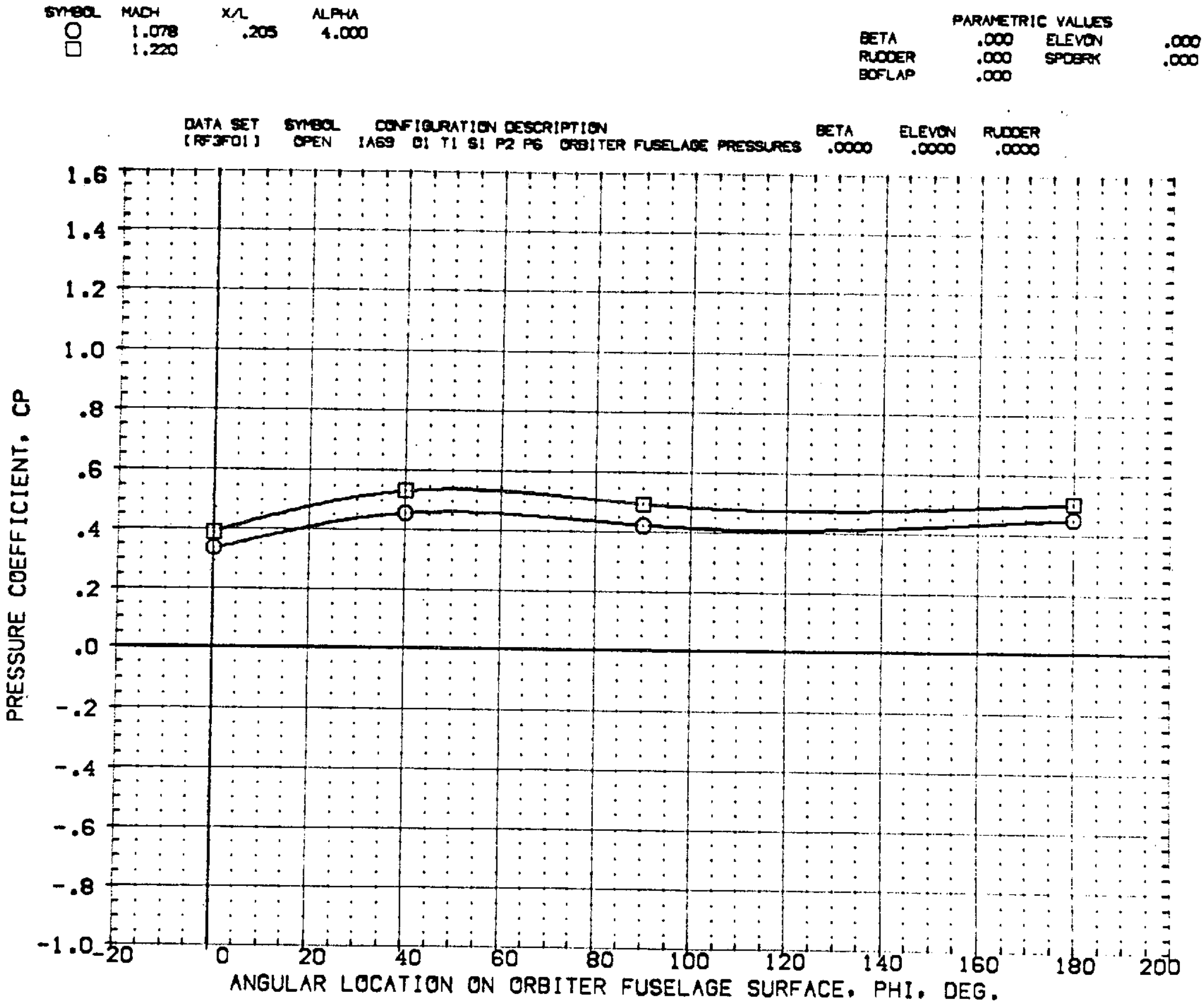


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.252	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

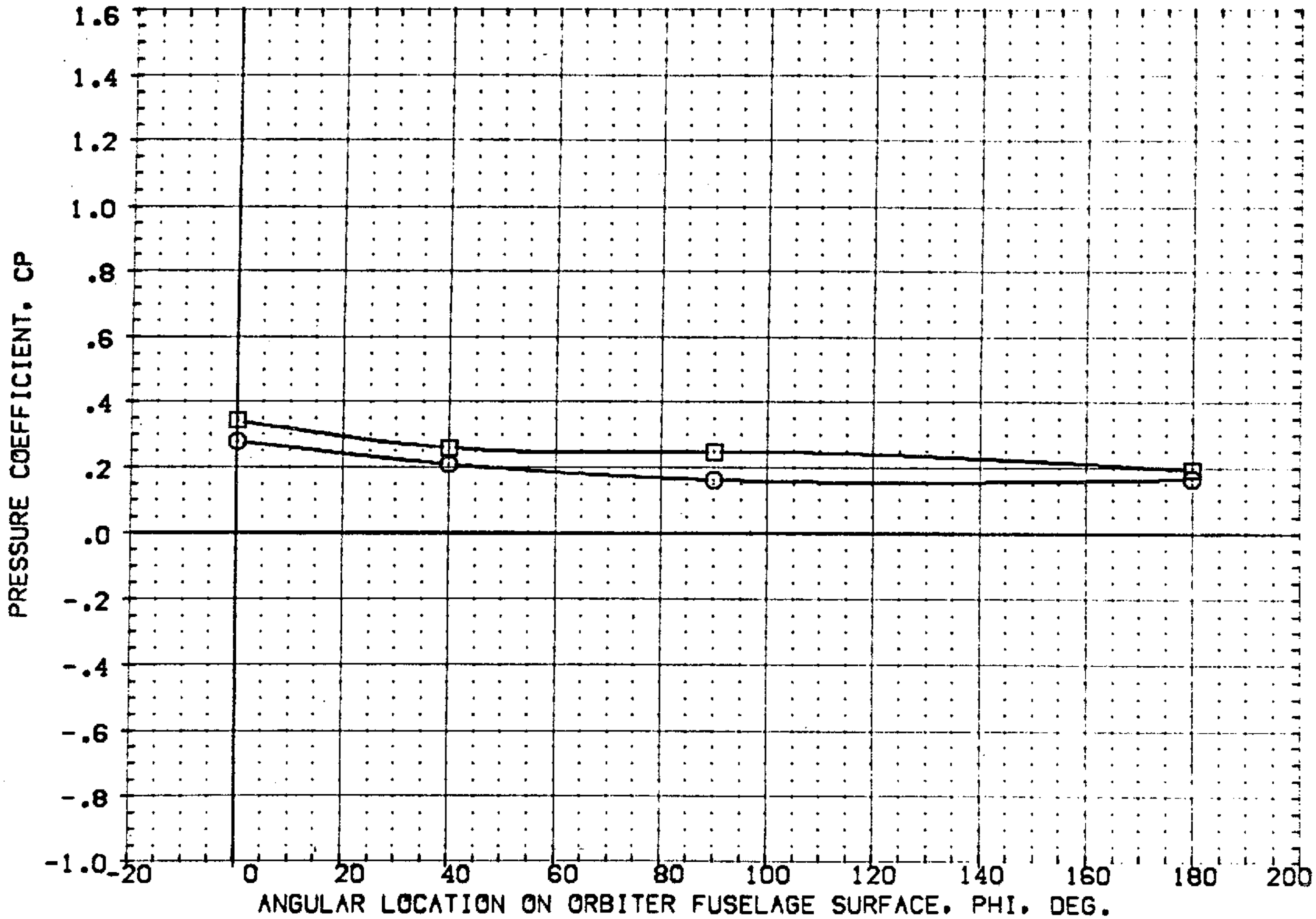


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.295	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

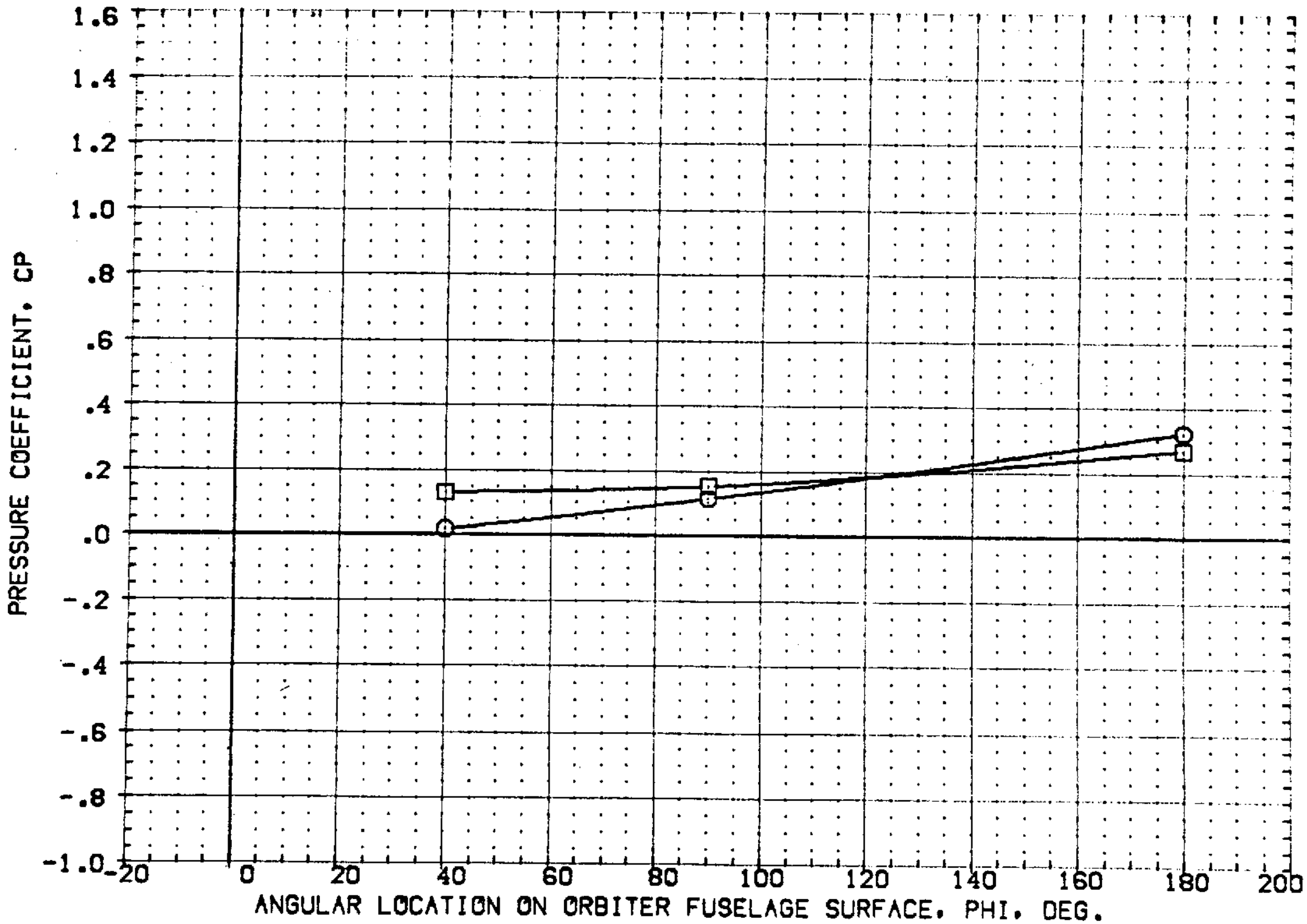


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.349	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 01 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

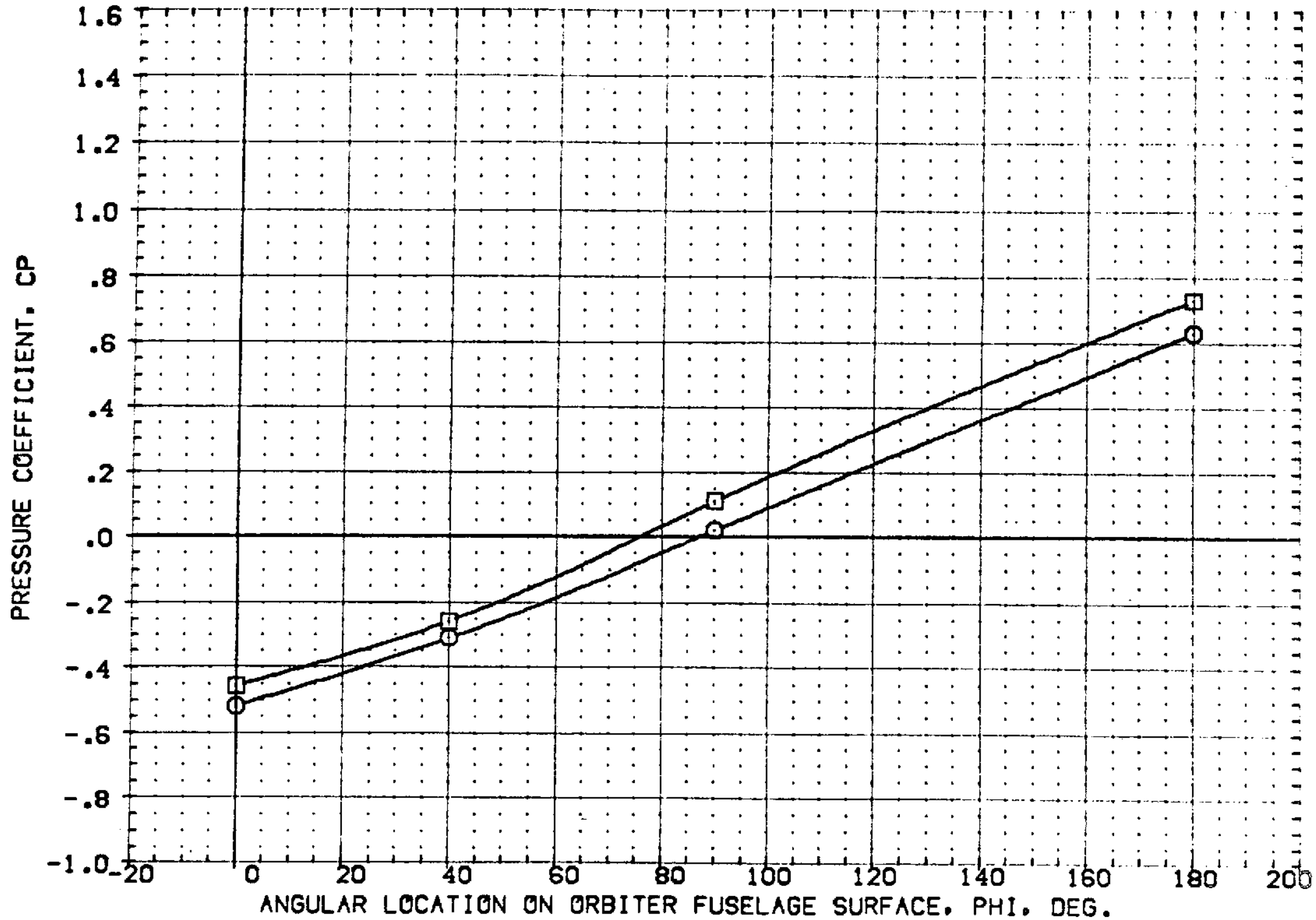


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

SYMBOL	MACH	X/L	ALPHA
○	1.078	.388	4.000
□	1.220		

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
RUDDER	.000	SPDBRK	.000
BDFLAP	.000		

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVON	RUDDER
(RF3F01)	OPEN	IA69 O1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES	.0000	.0000	.0000

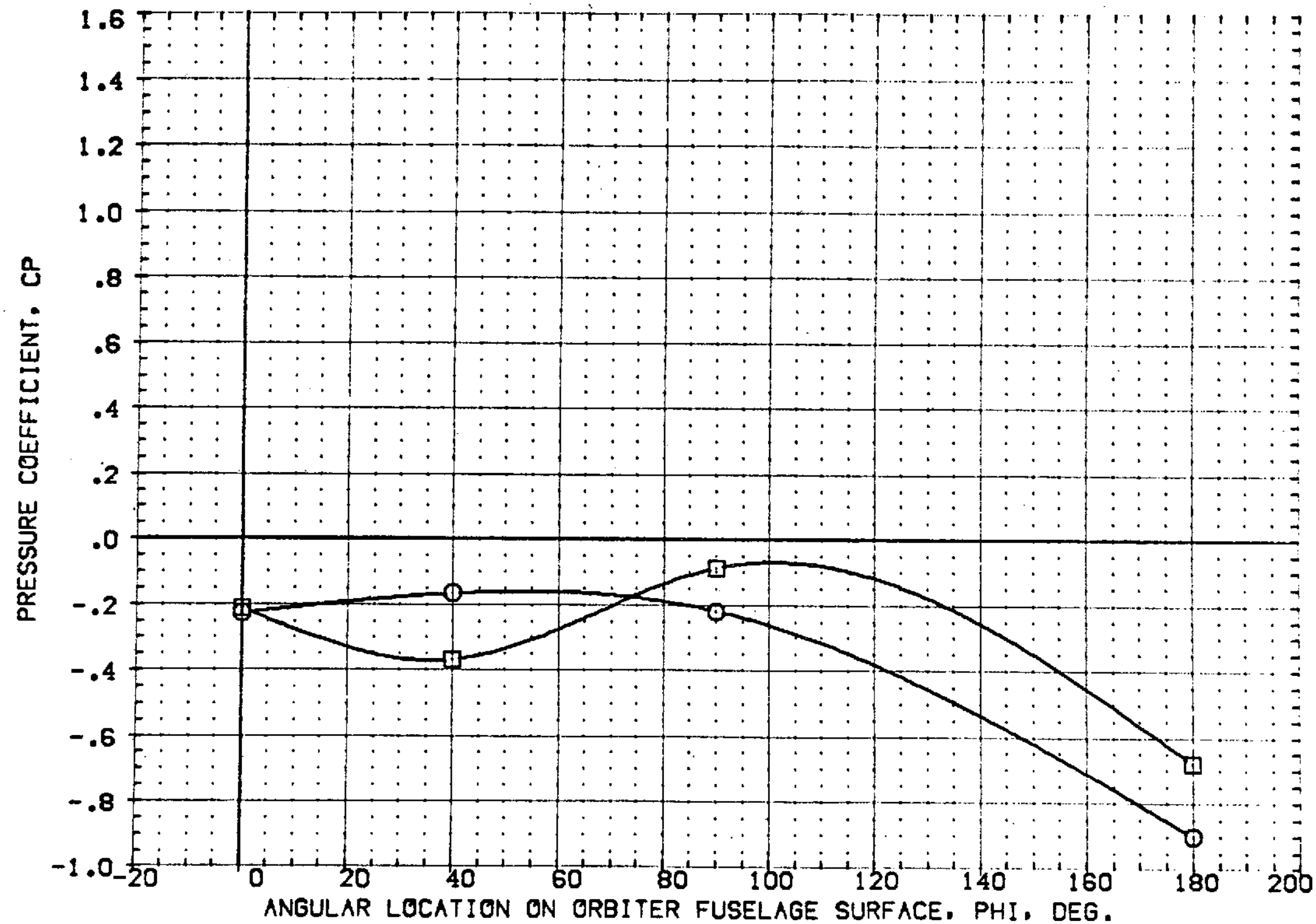


FIG 9 EFFECT OF MACH NUMBER ON ORBITER PRESSURE LOADING

APPENDIX A

TABULATED SOURCE DATA - FORCE

Tabulations of plotted data are available on request from Data Management Services.

IA69 O1 T4 S1 P2 P7 (RF3A07) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 11/ 2 RN/L = 7.30 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.218	-4.190	-.28040	.25950	.10590	.17100	-.07520	.02940	.46590	-.00010
1.218	-.090	-.01640	.26150	.00900	.16280	-.07120	.03300	.46300	-.00010
1.218	3.970	.21700	.25630	-.07940	.15900	-.06980	.03500	.45520	-.00010
	GRADIENT	.06096	-.00039	-.02271	-.00147	.00066	.00069	-.00131	-.00000

IA69 O1 T4 S1 P2 P7 (RF3A08) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 12/ 2 RN/L = 7.30 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.222	-4.070	-.28010	.26170	.11260	-.00550	.00580	.00010	.45930	.00000
1.222	.070	-.01130	.26290	.01160	-.00630	.00650	.00000	.45700	.00000
1.222	4.150	.22140	.25690	-.07840	-.00530	.00630	.00020	.45060	.00000
	GRADIENT	.06102	-.00058	-.02324	.00002	.00006	.00001	-.00106	.00000

IA69 O1 T4 S1 P2 P7 (RF3A09) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 17/ 2 RN/L = 7.20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.221	-4.010	-.27630	.25990	.10980	-.00390	.00520	.00000	.45690	.00000
1.221	.030	-.01170	.26200	.01020	-.00520	.00610	.00000	.45490	.00000
1.221	4.080	.21880	.25740	-.07900	-.00290	.00460	.00030	.44900	.00000
	GRADIENT	.06120	-.00031	-.02334	.00012	-.00007	.00004	-.00098	.00000

IA69 O1 T4 S1 P2 P7 (RF3A10) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 13/ 2 RN/L = 7.30 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.217	-4.150	-.27780	.27250	.10470	-.17850	.08420	-.02840	.46430	.00000
1.217	-.070	-.01540	.27090	.00900	-.17130	.08030	-.03210	.46130	.00000
1.217	4.010	.21880	.26340	-.08290	-.16620	.07800	-.03340	.45220	.00000
	GRADIENT	.06086	-.00112	-.02299	.00151	-.00076	-.00061	-.00148	.00000

IA69 O1 T1 S1 P2 P6 (RF3A11) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 14/ 2 RN/L = 7.20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.217	-4.100	-.27220	.27140	.10260	-.17640	.08240	-.02830	.46320	.00000
1.217	-.220	-.02440	.27170	.01200	-.17100	.07910	-.03170	.46080	.00000
1.217	4.040	.22000	.26320	-.08190	-.16620	.07720	-.03330	.45260	.00000
	GRADIENT	.06042	-.00102	-.02266	.00125	-.00064	-.00061	-.00131	.00000

IA69 O1 T1 S1 P2 P6 (RF3A12) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 16/ 2 RN/L = 7.20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.221	-4.190	-.28560	.26160	.11340	-.00350	.00470	.00000	.45980	.00000
1.221	-.100	-.01850	.26300	.01360	-.00460	.00540	.00000	.45800	.00000
1.221	4.000	.21210	.25790	-.07530	.00000	.00270	.00050	.45210	.00000
	GRADIENT	.06077	-.00045	-.02304	.00043	-.00024	.00006	-.00094	.00000

IA69 O1 T1 S1 P2 P6 (RF3A13) (17 APR 74)

REFERENCE DATA

SREF = .6053 SQ.FT. XMRP = 14.6850 INCHE
LREF = 19.3550 INCHES YMRP = .0000 INCHES
BREF = 19.3550 INCHES ZMRP = 6.0000 INCHES
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
BDFLAP = .000 RUDDER = .000
SPDBRK = .000

RUN NO. 15/ 2 RN/L = 7.20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAF	CLM	CY	CYN	CBL	CA	CACORB
1.218	-4.250	-.28180	.25990	.10590	.16810	-.07260	.02950	.46660	.00000
1.218	-.060	-.01190	.26360	.00630	.16060	-.06940	.03310	.46440	-.00010
1.218	4.020	.21810	.25700	-.07990	.15500	-.06560	.03490	.45640	-.00010
	GRADIENT	.06047	-.00035	-.02247	-.00158	.00085	.00065	-.00123	-.00001

APPENDIX B

TABULATED SOURCE DATA - PRESSURE

Tabulations of plotted data are available on request from Data Management Services.

IA69 C1 T1 S1 P2 P6 BASE PRESSURES (RF3801) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.078 ALPHA (1) = -4.230 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3806
2.000	.0000
3.000	-.3544
4.000	.0000
5.000	-.4732
6.000	-.4402
7.000	-.4071
8.000	-.3808
9.000	-.4391

MACH (1) = 1.078 ALPHA (2) = -.030 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3722
2.000	.0000
3.000	-.3675
4.000	.0000
5.000	-.4652
6.000	-.4776
7.000	-.4199
8.000	-.3723
9.000	-.4433

IA69 C4 T1 S1 P2 P6 BASE PRESSURES (RF3BD1)

MACH (1) = 1.078 ALPHA (3) = 4.000 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3585
2.000	.0000
3.000	-.3547
4.000	.0000
5.000	-.4494
6.000	-.4713
7.000	-.4161
8.000	-.3594
9.000	-.4201

MACH (2) = 1.220 ALPHA (1) = -4.120 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3389
2.000	.0000
3.000	-.3131
4.000	.0000
5.000	-.3919
6.000	-.4003
7.000	-.3469
8.000	-.3381
9.000	-.3603

MACH (2) = 1.220 ALPHA (2) = .110 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3334
2.000	.0000
3.000	-.3247
4.000	.0000
5.000	-.3705
6.000	-.4375
7.000	-.3596
8.000	-.3320
9.000	-.3462

IA69 C1 T1 S1 F2 P6 BASE PRESSURES (RF3801)

MACH (2) = 1.220 ALPHA (3) = 4.200 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3388
2.000	.0000
3.000	-.3332
4.000	.0000
5.000	-.3573
6.000	-.4474
7.000	-.3818
8.000	-.3387
9.000	-.3269

IA69 C1 T1 S1 F2 F6 BASE PRESSURES (RF3802) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.150 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3504
2.000	.0000
3.000	-.3217
4.000	.0000
5.000	-.3953
6.000	-.4289
7.000	-.3625
8.000	-.3515
9.000	-.3686

MACH (1) = 1.216 ALPHA (2) = .050 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3379
2.000	.0000
3.000	-.3315
4.000	.0000
5.000	-.3683
6.000	-.4666
7.000	-.3886
8.000	-.3414
9.000	-.3379

IA69 C4 T1 S1 P2 P6 BASE PRESSURES (RF3B02)

MACH (1) = 1.216 ALPHA (3) = 4.140 RN/L = 7.400

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3407
2.000	.0000
3.000	-.3384
4.000	.0000
5.000	-.3553
6.000	-.4775
7.000	-.4047
8.000	-.3435
9.000	-.3307

IA69 C4 T1 S1 F2 P6 BASE PRESSURES (RF3B03) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.200 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3385
2.000	.0000
3.000	-.3210
4.000	.0000
5.000	-.3937
6.000	-.3750
7.000	-.3338
8.000	-.3386
9.000	-.3694

MACH (1) = 1.216 ALPHA (2) = .000 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3289
2.000	.0000
3.000	-.3209
4.000	.0000
5.000	-.3709
6.000	-.3851
7.000	-.3354
8.000	-.3279
9.000	-.3593

IA69 C4 T1 S1 P2 P6 BASE PRESSURES (RF3803)

MACH (1) = 1.216 ALPHA (3) = 4.110 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3325
2.000	.0000
3.000	-.3246
4.000	.0000
5.000	-.3464
6.000	-.4136
7.000	-.3625
8.000	-.3297
9.000	-.3262

IA69 C1 T4 S1 F2 P7 BASE PRESSURES (RF3B04) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.210 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3386
2.000	.0000
3.000	-.3173
4.000	.0000
5.000	-.3808
6.000	-.3699
7.000	-.3417
8.000	-.3383
9.000	-.3563

MACH (1) = 1.215 ALPHA (2) = .010 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3276
2.000	.0000
3.000	-.3198
4.000	.0000
5.000	-.3586
6.000	-.3818
7.000	-.3489
8.000	-.3262
9.000	-.3479

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF3804)

MACH (1) = 1.215 ALPHA (3) = 4.140 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3337
2.000	.0000
3.000	-.3225
4.000	.0000
5.000	-.3341
6.000	-.4084
7.000	-.3791
8.000	-.3302
9.000	-.3105

IA69 C1 T4 S1 F2 P7 BASE PRESSURES (RF3805) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.220 ALPHA (1) = -4.150 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3396
2.000	.0000
3.000	-.3159
4.000	.0000
5.000	-.3754
6.000	-.3924
7.000	-.3637
8.000	-.3398
9.000	-.3433

MACH (1) = 1.220 ALPHA (2) = .080 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3322
2.000	.0000
3.000	-.3247
4.000	.0000
5.000	-.3542
6.000	-.4271
7.000	-.3653
8.000	-.3308
9.000	-.3288

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF3805)

MACH (1) = 1.220 ALPHA (3) = -4.200 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3377
2.000	.0000
3.000	-.3325
4.000	.0000
5.000	-.3352
6.000	-.4441
7.000	-.3911
8.000	-.3384
9.000	-.3102

IA69 C1 T4 S1 F2 P7 BASE PRESSURES (RF3806) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 INK ST
LREF = 1290.3000 IN. YMRP = .0000 INK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 INK WL
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.030 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3492
2.000	.0000
3.000	-.3277
4.000	.0000
5.000	-.3805
6.000	-.4414
7.000	-.3849
8.000	-.3526
9.000	-.3554

MACH (1) = 1.215 ALPHA (2) = .150 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3398
2.000	.0000
3.000	-.3329
4.000	.0000
5.000	-.3572
6.000	-.4622
7.000	-.3927
8.000	-.3438
9.000	-.3209

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF3806)

MACH (1) = 1.215 ALPHA (3) = 4.330 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3420
2.000	.0000
3.000	-.3374
4.000	.0000
5.000	-.3369
6.000	-.4739
7.000	-.4116
8.000	-.3452
9.000	-.3104

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF3807) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.218 ALPHA (1) = -4.190 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3478
2.000	.0000
3.000	-.3326
4.000	.0000
5.000	-.4047
6.000	-.4747
7.000	-.4072
8.000	-.3503
9.000	-.3813

MACH (1) = 1.218 ALPHA (2) = -.090 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3371
2.000	.0000
3.000	-.3287
4.000	.0000
5.000	-.3912
6.000	-.4678
7.000	-.4061
8.000	-.3403
9.000	-.3588

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF38O7)

MACH (1) = 1.218 ALPHA (3) = 3.970 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3365
2.000	.0000
3.000	-.3311
4.000	.0000
5.000	-.3768
6.000	-.4699
7.000	-.4110
8.000	-.3394
9.000	-.3568

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF3808) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.222 ALPHA (1) = -4.070 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3410
2.000	.0000
3.000	-.3259
4.000	.0000
5.000	-.3999
6.000	-.4183
7.000	-.3725
8.000	-.3401
9.000	-.3705

MACH (1) = 1.222 ALPHA (2) = .070 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3314
2.000	.0000
3.000	-.3243
4.000	.0000
5.000	-.3852
6.000	-.4288
7.000	-.3747
8.000	-.3300
9.000	-.3564

IA69 C1 T4 S1 P2 P7 BASE PRESSURES (RF3B08)

MACH (1) = 1.222 ALPHA (3) = 4.150 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3336
2.000	.0000
3.000	-.3288
4.000	.0000
5.000	-.3728
6.000	-.4359
7.000	-.3912
8.000	-.3330
9.000	-.3464

IA69 C1 T4 S1 F2 P7 BASE PRESSURES (RF3809) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.221 ALPHA (1) = -4.010 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3411
2.000	.0000
3.000	-.3245
4.000	.0000
5.000	-.3980
6.000	-.4220
7.000	-.3680
8.000	-.3409
9.000	-.3663

MACH (1) = 1.221 ALPHA (2) = .030 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3305
2.000	.0000
3.000	-.3237
4.000	.0000
5.000	-.3788
6.000	-.4308
7.000	-.3765
8.000	-.3297
9.000	-.3509

IA69 C1 T4 S1 F2 P7 BASE PRESSURES (RF3809)

MACH (1) = 1.221 ALPHA (3) = 4.080 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3341
2.000	.0000
3.000	-.3295
4.000	.0000
5.000	-.3638
6.000	-.4352
7.000	-.3887
8.000	-.3337
9.000	-.3382

IA69 C1 T4 S1 P2 F7 BASE PRESSURES (RF3810) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.217 ALPHA (1) = -4.150 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3348
2.000	.0000
3.000	-.3172
4.000	.0000
5.000	-.4044
6.000	-.3774
7.000	-.3374
8.000	-.3365
9.000	-.3814

MACH (1) = 1.217 ALPHA (2) = -.070 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3285
2.000	.0000
3.000	-.3176
4.000	.0000
5.000	-.3935
6.000	-.3796
7.000	-.3559
8.000	-.3293
9.000	-.3762

IA69 C4 T4 S1 P2 P7 BASE PRESSURES (RF3810)

MACH (1) = 1.217 ALPHA (3) = 4.010 RN/L = 7.300

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3280
2.000	.0000
3.000	-.3125
4.000	.0000
5.000	-.3742
6.000	-.4001
7.000	-.3731
8.000	-.3281
9.000	-.3493

IA69 C4 T1 S1 P2 P6 BASE PRESSURES (RF3811) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.217 ALPHA (1) = -4.100 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3341
2.000	.0000
3.000	-.3167
4.000	.0000
5.000	-.4042
6.000	-.3704
7.000	-.3447
8.000	-.3351
9.000	-.3803

MACH (1) = 1.217 ALPHA (2) = -.220 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3264
2.000	.0000
3.000	-.3143
4.000	.0000
5.000	-.3907
6.000	-.3770
7.000	-.3549
8.000	-.3279
9.000	-.3742

IA69 C1 T1 S1 F2 F6 BASE PRESSURES (RF3811)

MACH (1) = 1.217 ALPHA (3) = 4.040 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3283
2.000	.0000
3.000	-.3137
4.000	.0000
5.000	-.3738
6.000	-.4008
7.000	-.3797
8.000	-.3284
9.000	-.3485

IA69 C4 T1 S1 F2 F6 BASE PRESSURES (RF3812) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.221 ALPHA (1) = -4.190 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3391
2.000	.0000
3.000	-.3235
4.000	.0000
5.000	-.3998
6.000	-.4221
7.000	-.3809
8.000	-.3380
9.000	-.3703

MACH (1) = 1.221 ALPHA (2) = -.100 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3327
2.000	.0000
3.000	-.3244
4.000	.0000
5.000	-.3880
6.000	-.4258
7.000	-.3793
8.000	-.3317
9.000	-.3598

IA69 C1 T1 S1 P2 P6 BASE PRESSURES (RF3812)

MACH (1) = 1.221 ALPHA (3) = 4.000 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3349
2.000	.0000
3.000	-.3297
4.000	.0000
5.000	-.3780
6.000	-.4307
7.000	-.3858
8.000	-.3340
9.000	-.3471

IA69 C1 T1 S1 P2 P6 BASE PRESSURES (RF3813) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.218 ALPHA (1) = -4.250 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3480
2.000	.0000
3.000	-.3333
4.000	.0000
5.000	-.4065
6.000	-.4732
7.000	-.4076
8.000	-.3495
9.000	-.3822

MACH (1) = 1.218 ALPHA (2) = -.060 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3362
2.000	.0000
3.000	-.3266
4.000	.0000
5.000	-.3917
6.000	-.4607
7.000	-.4042
8.000	-.3382
9.000	-.3586

IA69 C1 T1 S1 P2 F6 BASE PRESSURES (RF3813)

MACH (1) = 1.218 ALPHA (3) = 4.020 RN/L = 7.200

SECTION (1)BASE DEPENDENT VARIABLE CP

X/L 1.0000

TAP NO	
1.000	-.3374
2.000	.0000
3.000	-.3318
4.000	.0000
5.000	-.3767
6.000	-.4698
7.000	-.4151
8.000	-.3393
9.000	-.3538

IA69 C1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES (RF3P01) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.078 ALPHA (1) = -4.230 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

PHI \ X/L	.1821	.2054	.2519	.2945	.3488	.3875
.000	1.2709	.4458	.4433		-.5770	-.4055
40.000		.5163	.3290	.1236	-.2917	-.2844
90.000		.5206	.2826	.2194	.0351	-.2322
180.000		.6533	.4180	.5098	.7178	-.7915

MACH (1) = 1.078 ALPHA (2) = -.030 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

PHI \ X/L	.1821	.2054	.2519	.2945	.3488	.3875
.000	1.2869	.3945	.3486		-.5667	-.3505
40.000		.4876	.2577	.0733	-.3097	-.2895
90.000		.4652	.2137	.1729	.0286	-.2248
180.000		.5470	.2949	.4196	.6713	-.8375

MACH (1) = 1.078 ALPHA (3) = 4.000 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

PHI \ X/L	.1821	.2054	.2519	.2945	.3488	.3875
.000	1.2870	.3340	.2771		-.5189	-.2270
40.000		.4557	.2078	.0150	-.3118	-.1672
90.000		.4221	.1605	.1127	.0195	-.2192
180.000		.4518	.1639	.3241	.6295	-.9005

IA69 C4 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES (RF3F01)

MACH (2) = 1.220 ALPHA (1) = -4.120 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3639	.4835	.5052		-.4432	-.2545
40.000		.5881	.3720	.2116	-.1620	-.0831
90.000		.5786	.3355	.2943	.1615	-.0709
180.000		.6891	.4433	.5584	.8008	-.5939

MACH (2) = 1.220 ALPHA (2) = .110 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3881	.4582	.4129		-.4620	-.2586
40.000		.5654	.3002	.1555	-.2125	-.3001
90.000		.5399	.2843	.2300	.1288	-.0705
180.000		.5934	.2967	.4439	.7566	-.6330

MACH (2) = 1.220 ALPHA (3) = 4.200 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3723	.3911	.3418		-.4569	-.2130
40.000		.5322	.2578	.1291	-.2593	-.3687
90.000		.4943	.2468	.1516	.1089	-.0887
180.000		.5048	.1926	.2704	.7319	-.6782

IA69 C4 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES (RF3F02) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.150 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3789	.5228	.5385		-.4767	-.2840
40.000		.7093	.4491	.3367	-.0963	-.0845
90.000		.7380	.4527	.3944	.2612	.0234
180.000		.6770	.4453	.5487	.7797	-.5980

MACH (1) = 1.216 ALPHA (2) = .050 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.4130	.4897	.4722		-.4951	-.3128
40.000		.7075	.3854	.3099	-.1235	-.1152
90.000		.6904	.3839	.3305	.2351	.0117
180.000		.5682	.3050	.4454	.7335	-.6324

MACH (1) = 1.216 ALPHA (3) = 4.140 RN/L = 7.400

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3972	.4606	.4101		-.5135	-.2838
40.000		.7071	.3425	.2952	-.1499	-.1521
90.000		.6500	.3316	.2692	.2020	.0032
180.000		.4791	.1743	.3176	.7027	-.6847

IA69 C1 T1 S1 P2 P6 ORBITER FUSELAGE PRESSURES (RF3F03) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.200 RN/L = 7.300

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.2799	.4549	.5012		-.4616	-.2268
40.000		.4256	.3479	.0900	-.1929	-.2451
90.000		.4050	.2515	.2215	.0450	-.1653
180.000		.6659	.4151	.5494	.7741	-.5530

MACH (1) = 1.216 ALPHA (2) = .000 RN/L = 7.300

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3011	.4355	.4296		-.4671	-.2875
40.000		.4020	.2694	.0319	-.2752	-.2139
90.000		.3572	.1603	.1614	.0240	-.1595
180.000		.5674	.2636	.4362	.7295	-.5961

MACH (1) = 1.216 ALPHA (3) = 4.110 RN/L = 7.300

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.2794	.4157	.3653		-.4812	-.2880
40.000		.3805	.2231	.0017	-.3421	-.1982
90.000		.3141	.1312	.0741	.0205	-.1733
180.000		.4748	.1690	.2830	.6979	-.6511

IA69 C1 T4 S1 P2 P7 ORBITER FUSELAGE PRESSURES (RF3F04) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.210 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.2731	.4347	.5378		-.4667	-.2395
40.000		.4149	.3555	.0964	-.1835	-.2804
90.000		.4158	.2501	.2194	.0452	-.1575
180.000		.6681	.4241	.5505	.7797	-.5518

MACH (1) = 1.215 ALPHA (2) = .010 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3015	.4150	.4548		-.4809	-.3171
40.000		.3766	.2797	.0498	-.2452	-.3377
90.000		.3634	.1604	.1656	.0275	-.1666
180.000		.5633	.2764	.4378	.7281	-.5915

MACH (1) = 1.215 ALPHA (3) = 4.140 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.2860	.3889	.2606		-.5015	-.3096
40.000		.3633	.2168	.0247	-.3336	-.2641
90.000		.3120	.1115	.0861	.0240	-.1707
180.000		.4796	.1772	.2850	.6989	-.6500

IA69 C4 T4 S1 F2 P7 ORBITER FUSELAGE PRESSURES (RF3FU5) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.220 ALPHA (1) = -4.150 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

PHI \ X/L	.1821	.2054	.2519	.2945	.3488	.3875
.000	1.3520	.4571	.5220		-.4357	-.2554
40.000		.5583	.3726	.2148	-.1550	-.0770
90.000		.5780	.3336	.2949	.1634	-.0709
180.000		.6875	.4452	.5581	.8030	-.5915

MACH (1) = 1.220 ALPHA (2) = .080 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

PHI \ X/L	.1821	.2054	.2519	.2945	.3488	.3875
.000	1.3861	.4173	.4096		-.4506	-.2511
40.000		.5342	.2776	.1518	-.2236	-.2273
90.000		.5322	.2749	.2202	.1343	-.0836
180.000		.5861	.2984	.4445	.7584	-.6290

MACH (1) = 1.220 ALPHA (3) = 4.200 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

PHI \ X/L	.1821	.2054	.2519	.2945	.3488	.3875
.000	1.3708	.3820	.3160		-.4624	-.2356
40.000		.5116	.2104	.1269	-.2720	-.3474
90.000		.4864	.2463	.1514	.1097	-.0939
180.000		.4977	.1910	.2869	.7304	-.6786

IA69 C4 T4 S1 F2 F7 ORBITER FUSELAGE PRESSURES (RF3F06) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 TNK ST
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.030 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3706	.4899	.5409		-.4757	-.2846
40.000		.6881	.4412	.3183	-.0989	-.0848
90.000		.7309	.4482	.3922	.2596	.0232
180.000		.6772	.4408	.5466	.7822	-.5999

MACH (1) = 1.215 ALPHA (2) = .150 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.4030	.4642	.4739		-.4876	-.2983
40.000		.6878	.3813	.2929	-.1219	-.1986
90.000		.6864	.3861	.3247	.2332	.0082
180.000		.5687	.3042	.4416	.7307	-.6309

MACH (1) = 1.215 ALPHA (3) = 4.330 RN/L = 7.200

SECTION (1)FUSELAGE DEPENDENT VARIABLE CP

X/L	.1821	.2054	.2519	.2945	.3488	.3875
PHI						
.000	1.3953	.3898	.3625		-.4490	-.2374
40.000		.6652	.3127	.2818	-.1610	-.1729
90.000		.6446	.3309	.2572	.1936	-.0040
180.000		.4753	.1726	.3017	.7063	-.6856

IA69 C1 T1 S1 F2 F6 WING UPPER SURFACE PRESS. (RF3U01) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = .000 ELEVCN = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.078 ALPHA (1) = -4.230 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.4930	.4045
.050	.1086	.0545
.150	-.2191	-.2192
.400	-.3445	-.5067
.725	-.1264	-.1906
.950	-.2321	-.2151

MACH (1) = 1.078 ALPHA (2) = -.030 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.5526	.5177
.050	-.0396	-.1164
.150	-.3659	-.3740
.400	-.4765	-.6552
.725	-.1330	-.3268
.950	-.2416	-.2150

MACH (1) = 1.078 ALPHA (3) = 4.000 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.5348	.5021
.050	-.2289	-.3661
.150	-.5502	-.5705
.400	-.6037	-.8109
.725	-.2530	-.4881
.950	-.2652	-.4773

IA69 C4 T1 S1 P2 P6 WING UPPER SURFACE PRESS. (RF3U01)

MACH (2) = 1.220 ALPHA (1) = -4.120 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

X/C \ 2Y/B	.5340	.7800
.000	.5424	.4806
.050	.2023	.1631
.150	-.0947	-.0843
.400	-.2592	-.3615
.725	.0399	-.1632
.950	-.0938	-.1298

MACH (2) = 1.220 ALPHA (2) = .110 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

X/C \ 2Y/B	.5340	.7800
.000	.5956	.5559
.050	.0375	.0140
.150	-.2636	-.2166
.400	-.3532	-.4821
.725	-.0874	-.4932
.950	-.1071	-.2079

MACH (2) = 1.220 ALPHA (3) = 4.200 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

X/C \ 2Y/B	.5340	.7800
.000	.5802	.5867
.050	-.1729	-.1867
.150	-.4506	-.3922
.400	-.4358	-.6235
.725	-.2233	-.6233
.950	-.1328	-.3329

IA69 C4 T1 S1 P2 P6 WING UPPER SURFACE PRESS. (RF3U02) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.150 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.6394	.5858
.050	.2325	.1915
.150	-.1131	-.0908
.400	-.2998	-.3945
.725	.0129	-.4309
.950	-.0482	-.1647

MACH (1) = 1.216 ALPHA (2) = .050 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.7013	.6508
.050	.0774	.0404
.150	-.2839	-.2107
.400	-.4118	-.5064
.725	-.1616	-.5448
.950	-.0550	-.2143

MACH (1) = 1.216 ALPHA (3) = 4.140 RN/L = 7.400

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.6968	.6736
.050	-.1199	-.1757
.150	-.4411	-.3907
.400	-.5478	-.6416
.725	-.2699	-.6575
.950	-.1096	-.2881

IA69 C4 T1 S1 F2 F6 WING UPPER SURFACE PRESS. (RF3U03) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.200 RN/L = 7.300

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.4702	.3798
.050	.1782	.1317
.150	-.0996	-.0914
.400	-.2452	-.3386
.725	-.0146	-.0589
.950	-.1403	-.1494

MACH (1) = 1.216 ALPHA (2) = .000 RN/L = 7.300

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.5323	.4669
.050	.0186	-.0087
.150	-.2383	-.2330
.400	-.3417	-.4686
.725	-.0387	-.2581
.950	-.1612	-.1498

MACH (1) = 1.216 ALPHA (3) = 4.110 RN/L = 7.300

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.5064	.4806
.050	-.1642	-.2169
.150	-.3928	-.4028
.400	-.4371	-.6044
.725	-.1472	-.4184
.950	-.1812	-.3313

IA69 C1 T4 S1 F2 F7 WING UPPER SURFACE PRESS. (RF3U04) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.210 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.4671	.3816
.050	.1753	.1299
.150	.0000	-.0908
.400	-.2442	-.3357
.725	-.0132	-.0584
.950	-.1400	-.1503

MACH (1) = 1.215 ALPHA (2) = .010 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.5314	.4718
.050	.0170	-.0081
.150	.0000	-.2318
.400	-.3417	-.4688
.725	-.0403	-.2669
.950	-.1595	-.1535

MACH (1) = 1.215 ALPHA (3) = 4.140 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.5117	.4894
.050	-.1676	-.2105
.150	.0000	-.3991
.400	-.4349	-.6048
.725	-.1504	-.4304
.950	-.1800	-.3310

IA69 C4 T4 S1 P2 P7 WING UPPER SURFACE PRESS. (RF3U05) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 INK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 INK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = .000 ELEVCN = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.220 ALPHA (1) = -4.150 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

X/C \ 2Y/B	.5340	.7800
.000	.5476	.4818
.050	.2041	-.0030
.150	.0000	-.0853
.400	-.2628	-.3611
.725	.0401	-.1710
.950	-.0940	-.1297

MACH (1) = 1.220 ALPHA (2) = .080 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

X/C \ 2Y/B	.5340	.7800
.000	.6004	.5611
.050	.0402	-.0028
.150	.0000	-.2148
.400	-.3557	-.4790
.725	-.0875	-.4916
.950	-.1048	-.2043

MACH (1) = 1.220 ALPHA (3) = 4.200 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

X/C \ 2Y/B	.5340	.7800
.000	.5996	.5855
.050	-.1594	-.0033
.150	.0000	-.3888
.400	-.4376	-.6202
.725	-.2220	-.6185
.950	-.1294	-.3196

IA69 C1 T4 S1 P2 P7 WING UPPER SURFACE PRESS. (RF3U06) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = -4.000 ELEVCN = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.030 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.6448	.5855
.050	.2299	-.0028
.150	.0000	-.0970
.400	-.3071	-.3986
.725	.0115	-.4399
.950	-.0493	-.1615

MACH (1) = 1.215 ALPHA (2) = .150 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.7053	.6479
.050	.0740	-.0026
.150	.0000	-.2146
.400	-.4126	-.5096
.725	-.1604	-.5423
.950	-.0542	-.2063

MACH (1) = 1.215 ALPHA (3) = 4.330 RN/L = 7.200

SECTION (1)UPPER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.000	.6968	.6699
.050	-.1147	-.0028
.150	.0000	-.3959
.400	-.5467	-.6432
.725	-.2710	-.6541
.950	-.1103	-.2890

IA69 C4 T1 S1 P2 P6 WING LOWER SURFACE PRESS. (RF3L01) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 INK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 INK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.078 ALPHA (1) = -4.230 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.4902	-.6885
.150	-.1885	-.2005
.400	-.0093	-.0172
.725	-.2997	-.2631
.950	-.7686	-.5878

MACH (1) = 1.078 ALPHA (2) = -.030 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.1181	-.0018
.150	-.0053	.0455
.400	.1203	.0371
.725	-.2780	-.2689
.950	-.7781	-.6028

MACH (1) = 1.078 ALPHA (3) = 4.000 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.1142	.2994
.150	.1479	.1988
.400	.1589	.0697
.725	-.2880	-.2728
.950	-.7756	-.6172

IA69 C4 T1 S1 P2 P6 WING LOWER SURFACE PRESS. (RF3L01)

MACH (2) = 1.220 ALPHA (1) = -4.120 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.4071	-.5181
.150	-.1238	-.4067
.400	.0401	-.0748
.725	-.1250	-.0679
.950	-.5712	-.3686

MACH (2) = 1.220 ALPHA (2) = .110 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.0800	-.0751
.150	.0193	.0612
.400	.1727	.1915
.725	-.0893	-.0803
.950	-.5449	-.3823

MACH (2) = 1.220 ALPHA (3) = 4.200 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.1789	.3684
.150	.1999	.2835
.400	.2493	.2080
.725	-.1029	-.0859
.950	-.5527	-.3969

IA69 C4 T1 S1 P2 P6 WING LOWER SURFACE PRESS. (RF3L02) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.150 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.3842	-.4749
.150	-.0923	-.3965
.400	.0607	.0546
.725	-.0610	-.0300
.950	-.5308	-.3380

MACH (1) = 1.216 ALPHA (2) = .050 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.0343	-.0249
.150	.0552	.2617
.400	.3239	.2220
.725	-.0255	-.0468
.950	-.5119	-.3543

MACH (1) = 1.216 ALPHA (3) = 4.140 RN/L = 7.400

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.2126	.4493
.150	.2807	.3565
.400	.3519	.2500
.725	-.0299	-.0529
.950	-.5188	-.3696

IA69 C4 T1 S1 P2 F6 WING LOWER SURFACE PRESS. - (RF3L03) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.216 ALPHA (1) = -4.200 RN/L = 7.300

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.2934	-.5567
.150	-.0855	-.1662
.400	-.0071	-.1222
.725	-.2927	-.1445
.950	-.4940	-.4350

MACH (1) = 1.216 ALPHA (2) = .000 RN/L = 7.300

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.0327	-.0377
.150	.0327	.0337
.400	.0680	.0331
.725	-.2452	-.1421
.950	-.5473	-.4409

MACH (1) = 1.216 ALPHA (3) = 4.110 RN/L = 7.300

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.1385	.2706
.150	.1428	.1891
.400	.1287	.1351
.725	-.2341	-.1531
.950	-.5525	-.4548

IA69 C4 T4 S1 P2 P7 WING LOWER SURFACE PRESS. (RF3L04) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = 4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.210 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.2902	-.5553
.150	-.0891	-.1711
.400	-.0054	-.1223
.725	-.2857	-.1440
.950	-.4834	-.4345

MACH (1) = 1.215 ALPHA (2) = .010 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.0289	-.0338
.150	.0351	.0406
.400	.0746	.0393
.725	-.2400	-.1423
.950	-.5456	-.4392

MACH (1) = 1.215 ALPHA (3) = 4.140 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.1402	.2681
.150	.1442	.1892
.400	.1314	.1344
.725	-.2295	-.1514
.950	-.5506	-.4531

IA69 C1 T4 S1 P2 P7 WING LOWER SURFACE PRESS. (RF3L05) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = .000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.220 ALPHA (1) = -4.150 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.4001	-.5121
.150	-.1298	-.4009
.400	.0471	-.0593
.725	-.1291	-.0690
.950	-.5725	-.3680

MACH (1) = 1.220 ALPHA (2) = .080 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.0864	-.0850
.150	.0193	.0730
.400	.1570	.1908
.725	-.0909	-.0785
.950	-.5469	-.3835

MACH (1) = 1.220 ALPHA (3) = 4.200 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.1639	.3564
.150	.1922	.2761
.400	.2423	.2069
.725	-.1023	-.0860
.950	-.5543	-.3978

IA69 C4 T4 S1 F2 P7 WING LOWER SURFACE PRESS. (RF3L06) (16 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN.
LREF = 1290.3000 IN. YMRP = .0000 TNK BP
BREF = 1290.3000 IN. ZMRP = 400.0000 TNK WL
SCALE = .0150 SCALE

PARAMETRIC DATA

BETA = -4.000 ELEVON = .000
RUDDER = .000 SPDBRK = .000
BDFLAP = .000

MACH (1) = 1.215 ALPHA (1) = -4.030 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.3734	-.4671
.150	-.0861	-.3764
.400	.0997	.0893
.725	-.0568	-.0289
.950	-.5311	-.3407

MACH (1) = 1.215 ALPHA (2) = .150 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	-.0513	-.0247
.150	.0540	.2509
.400	.3194	.2235
.725	-.0271	-.0485
.950	-.5151	-.3570

MACH (1) = 1.215 ALPHA (3) = 4.330 RN/L = 7.200

SECTION (1)LOWER WING DEPENDENT VARIABLE CP

2Y/B	.5340	.7800
X/C		
.050	.2137	.4565
.150	.2846	.3623
.400	.3554	.2540
.725	-.0282	-.0529
.950	-.5202	-.3701